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ORIGINAL ARTICLES.

SEPTIC PERITONITIS.

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ALTHOUGH the gonococcus was not discovered by Neisser until 1879, still, in 1872 Noeggerath pointed out upon clinical grounds a close etiologic relation between inflammatory conditions of the female pelvic organs and gonorrhea. In 1886 Westermarck, by means of the microscope, first discovered the gonococcus in a case of pyosalpinx. Since then numerous observers have demonstrated the presence of this organism in salpingitis, among them Orthmann, in one of eight cases; Schmitt, in one case; Steman, in one case; Menge, in three of twenty-six cases; Zweifel, in eight of forty-four cases; Reichel, in one case; Döderlein, in one case; Wertheim, in nine of twenty-four cases. In addition, Wertheim has been able to cultivate it in seven cases and Menge in one. In all about one-hundred-and-eight cases have been recorded in the literature that have been examined for the presence of gonococci, either by the microscope or by cultures, and in thirty-four cases, or in 31 per cent., this organism has been found. Sixty-one of the cases were sterile, or free from bacteria, and in but eleven of the one-hundred-and-six were other bacteria than gonococci present.¹

Wright has by cultures demonstrated the presence of the gonococcus in about 20 per cent. of cases, giving the pathologic condition found and the results of bacteriologic examinations in those cases in which these were positive.

In my own experience of ten cases operated upon for pus-tubes in which bacteriologic examinations were made, I have demonstrated the presence of the gonococcus in only one. Of these ten cases, as ascertained by the clinical history previous to operation, two were undoubtedly due to puerperal infection. In these two no micro-organisms whatsoever were found. Three cases were due to chancroidal infection, the chancroid existing previous to the operation and previous to the occurrence of the pelvic lesion; in two of these cases the de-

velopment of the pelvic trouble was observed from the beginning. Examination of the tubes in these three cases showed the presence of the streptococcus pyogenes aureus, which was in one found both in cover-slip preparations and by cultivation. One case showed the presence of an organism resembling in morphologic appearance and in staining reaction the diplococcus of pneumonia. Unfortunately, no cultures were made in the second case. One case showed no organisms whatsoever either in cover-slip preparations or by cultivation. In the other five cases, due to gonorrheal infection, as shown by the clinical history, organisms were found in only one. These were demonstrated by microscopic examination, but not by culture-methods. They presented the characteristic appearance and characteristic staining, decolorizing by Gram's method. All of these cases recovered without trouble, although in two there was at the time of enucleation an escape of pus into the peritoneal cavity. As I have said, all the cases recovered. There were no fistulæ, nor was any trouble whatsoever observed during convalescence.

It has been generally believed that the presence of gonococci in pus-tubes meant that the pus was of a low grade of virulence, and that its escape into the peritoneal cavity did not necessarily mean that the patient would not get well. Those operators who have found the gonococcus present, and the gonococcus alone, without mixed infection with the staphylococcus or streptococcus, have regarded the case as free from all danger of infection whatsoever. Even when the pus containing this one organism had escaped into the peritoneal cavity, no drainage has been employed and no extra precautions taken to prevent infection.

In many cases the bacteria that have been present in pus-tubes at the time of infection of these tubes have died out, and it has been the rule that in those cases in which there was much pus there were few or no organisms, and when these were present they were of low vitality; the most virulent, and those that gave the most trouble being found in tubes in which there was very little pus, and in which the infection was more recent. This is no doubt due to the fact that the organisms themselves generate a poison that is inimical to their existence.

In the cases that I have examined microscopically the pus observed has contained a good deal of detritus and many broken-up cells, the cells that

¹ Wright: The American Journal of the Medical Sciences, February, 1895, vol. cix, p. 118, No. 2.

were stained not showing the sharpness of outline that we find in recent suppurative processes. On the contrary, when the pus has been scant in quantity the pus-cells have been well-defined, and in these organisms were found, except in the one case in which the gonococcus was discovered, and in which there was quite a large collection of pus that had existed for some time.

I believe that the gonococcus in its virulent state, before it has been for any length of time in the pus of a pyosalpinx, is perfectly capable of infecting the peritoneum, and will, if opportunity is afforded, produce the most virulent peritonitis—peritonitis that leads to rapid death, with marked symptoms of profound septic infection. I have recently had an opportunity of observing such a case, and while this case was operated upon by another surgeon, it fell to my lot as curator to perform the autopsy and to make the bacteriologic examination. In this case gonococci were found free in the peritoneal cavity. It will not be amiss, with all due deference to the surgeon, a most capable and efficient gentleman, one for whom I have the highest regard, to relate the case so far as it came under my observation in the autopsy-room, giving in addition a short history:

The patient was a prostitute, about seventeen years of age, who was admitted to the hospital in April, 1895. She was in the habit of having intercourse during the menstrual period, and to prevent detection by those men with whom she copulated she was in the habit of introducing a tampon into the vagina. Three weeks before her entrance into the hospital she had contracted gonorrhea. About two weeks afterward her menstrual flow came on, and as usual she placed a sponge in the vagina to absorb the bloody discharge, as she had done on previous occasions. The sponge was removed three days later, and she then stated that the odor was exceedingly offensive. She had before removal of the tampon begun to experience some abdominal pain, which increased very much in severity a day or two later, after which time she felt some chilliness, and on the next day distinct chills, headache, constipation, etc. She then came into the hospital, when a diagnosis of double pyosalpinx was made, and six days afterward, that is, on the 23d of April, she submitted to an abdominal section. During this period the temperature had ranged from 100° to 102° F.; at no time was the temperature normal, while the pulse-rate was from 90 to 120.

The right tube was removed without much trouble. A small quantity of pus that was in the left broad ligament escaped into the abdominal cavity. The tissues on the left side were exceedingly friable. The first ligature applied to the stump cut through, as did the second, the third being placed well on the fundus of the uterus. After irrigation a drainage-tube was inserted and the abdomen closed. Within twenty-four hours septic

peritonitis developed. On the second day the drainage-tube was removed and an enema given, and the bowels moved as a result. On the third day there were nausea, vomiting, and delirium most violent in character, death closing the scene late on the same afternoon, just seventy-two hours after the operation.

The autopsy had to be made rather hurriedly. There was union between the abdominal muscles and the peritoneum at the point of incision. About a pint of pus had collected in the pelvis. The ligatures had held, and the stumps were covered by adherent greater omentum. The entire peritoneum was violently inflamed, the process being most severe in the pelvis. Besides being swollen and softened, the intestinal peritoneum presented numerous small ecchymoses. There was no marked change in any other abdominal organ. The intestines were agglutinated, with some pus between them here and there in the cavity.

After having studied this case carefully from its clinical aspect, I came to the conclusion, as already stated, that the gonococcus, when it directly infects the peritoneal cavity in a virulent form, is capable of producing peritonitis most septic in character. Working upon this line I addressed a letter to a number of prominent surgeons throughout the country embodying the following questions: Had they ever found the gonococcus in septic peritonitis; if so, had it also been found in the genital tract? Had recovery from peritonitis followed? How soon after infection had symptoms first manifested themselves? Were other organisms besides the gonococcus found intraperitoneally? A number of the gentlemen to whom letters were addressed had done no work in this line whatsoever; in fact, had done no pathologic work bearing upon the subjects named. Others stated that while they had found the gonococcus in pus-tubes they never felt any alarm at its presence. One or two of these letters I should like to quote in full as giving the opinions of some of the best men in this country.

Dr. Howard A. Kelly, of Baltimore, wrote that he had made no experimental studies whatever, but his experience had been that the gonococcus is but rarely found either in pus-tubes or in the peritoneum. He further says:

"I have found it in suppurative peritonitis in two cases in which there was a recent rupture. The peritonitis had become general; the intestines were agglutinated in all directions, and there was much free pus. The patients were extremely prostrated, with a rapid pulse. The effect, however, upon the system at large was by no means that of staphylococcal or streptococcal infection. In all my culture-work and cover-slip work with pus-tubes I have not found the gonococcus more than half a dozen times. I look upon these cases as peculiarly favorable, and never think of drainage because of the contamination of the peritoneum with gonococcal pus during an enucleation, as my experience has been that the organism has a very low grade of vitality in the peritoneum."

Dr. Roswell Park, of Buffalo, wrote:

"It has not yet happened to me to find a pure form of gonococcus infection in any case of septic peritonitis. This answer will dispose of your second, third, and fourth questions. In answer to your fifth, I would say that in every instance in which I have found the gonococcus in connection with septic disturbances other organisms have been present.

"I have not yet seen convincing reason to believe that the gonococcus by itself is anything more than possibly a facultative pyogenic organism, and I certainly am of the opinion that it does not always produce pus."

Dr. Park also kindly referred to the following statements:

"Challan, quoted in the *Gazette di Torino* (1893, No. 40, p. 792), has reported a case of gonorrhea, at first uncomplicated, followed after eight days by fatal suppurative peritonitis, in which only the gonococcus could be found. Mermet (*Annales des Maladies des Organes Genito-Urinaires*, 1893, September, p. 695) has also reported a similar case, which recovered. In this case the disease followed a funiculitis, and seemed to have been the product of a direct extension. Baumgarten claimed that such cases are not rare, and that within two months previously he had seen two similar extensive cases which speedily recovered."

Dr. M. H. Richardson, of Boston, observed some years ago a case of septic fulminating peritonitis following gonorrhea:

"There was enlargement of a lymph-gland in the left side of the pelvis just above Poupart's ligament. The gland was broken down, and contained pus. There was general peritonitis, with all its symptoms. An operation was done, but it did no good, the patient dying in a short time."

Dr. William T. Lusk of New York, has reported two cases dying of peritonitis from rupture of pus-tubes, presumably of gonorrheal origin, at the time of labor, but states that unfortunately no special search was made for gonococci.

Dr. Christian Fenger, of Chicago, wrote that he has never found the gonococcus in peritonitis.

Dr. A. Vander Veer, of Albany, has found the gonococcus in cases of pyosalpinx, with pelvic peritonitis, but, at the same time, has considered these ordinary cases, as recovery has followed, with a very small percentage of mortality.

Dr. Hunter Robb, of Cleveland, has never been fully satisfied that the gonococcus was present in any case of septic peritonitis that he has examined, and has not been able to demonstrate its presence in any culture he has made from septic fluids. In most of the cases he has examined microscopically, and often by cultures, all showed the presence of mixed infection. In those cases of ovarian abscess and pyosalpinx in which pus was found, he seldom, if ever, obtained any organisms that would grow on any media that he had.

Dr. C. B. Penrose, of Philadelphia, believes, as a result of his own experience, that the gonococcus

alone in an uninjured peritoneum is probably harmless. He fears only the streptococcus, the bacillus coli communis, and the staphylococcus.

These letters will be sufficient as showing the opinion of the medical profession of to-day. With this my own opinion has been in accord, but from the case just reported, with the result that has been given, we must conclude that the gonococcus is capable of producing the most septic form of peritonitis. In this case, as Dr. Howard A. Kelly, in his letter says of similar cases, there was the greatest prostration. The infection became evident almost from the start. The pulse was very rapid, and there was a most decided impression upon the whole system of the patient. In this case, although most careful search was made by culture and otherwise, no other organisms were found. The organisms found were examined by various methods of staining, and shown positively to be gonococci.

Following out this line of work, I have been making some experiments upon animals to demonstrate if possible more clearly than has heretofore been done the relation that the gonococcus really bears in the production of septic peritonitis. I believe, as stated, that it may, in a virulent condition, when infected directly into the peritoneum when this is not in the best condition for resisting infection, be capable of producing a great deal of trouble; and I believe that when I have concluded my experiments, which will be duly published in full, I shall be able to positively demonstrate this fact. I am not, however, absolutely sure of this, and recognize the fact that a single case is hardly sufficient upon which to base any rule, or to enable us to lay down any definite law with regard to this matter. Still, if the gonococcus is capable, under any conditions whatsoever, of producing a lesion in the peritoneum sufficient to cause death, then we must guard against any possible source of infection by this means. If the organism is present we must not be content to close up the peritoneum without drainage, but we should employ the same means to thoroughly cleanse the abdominal cavity as we would when the streptococcus or the staphylococcus is found. These latter organisms are undoubtedly the cause of the greatest number of cases of septic peritonitis that we see; nevertheless the other as an etiologic factor must not be overlooked.

In conclusion, I desire to express my sincere thanks to Dr. John Cashin, of the Resident Staff of the City Hospital, for his valuable assistance not only in performing the autopsy and bacteriologic research in the case cited, but for his excellent microscopic examinations of several other pus-tubes removed and included in the ten cases mentioned.

**GENERAL ERYSIPELAS OCCURRING DURING
THE PUERPERIUM, FOLLOWED BY
POPLITEAL THROMBOSIS
AND GANGRENE.**

BY LLOYD M. BERGEN, M.D.,
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THE following case in private practice presents several rare and interesting features. The points that are worthy of special consideration are perhaps not so much the successive individual complications as their association and the determination of etiologic relationship between them:

Mrs. C., aged thirty-four, a tertipara, of Irish parentage, menstruated at fourteen. Her general health had always been considered perfect. She had never been ill in her life, except during her confinements. Her weight was one-hundred-and-eighty pounds, and her temperament phlegmatic. Her first labor occurred in October, 1892, when I saw her in consultation with Drs. Haskin and Haven. After a prolonged and exhausting labor of forty-eight hours she was delivered of a large, dead child. The presentation was normal. The cervix was very rigid, and as the amniotic fluid had escaped twelve hours previously, artificial dilatation was required before forceps could be applied. The third stage was rapid and easy; hemorrhage was moderate. A slight perineal laceration occurred, which was repaired. Recovery was tedious, but I believe uneventful.

On October 17, 1893, I attended the patient in her second labor. Owing to the extreme thickness of the abdominal walls, and the immense amount of amniotic fluid, no presentation could be determined until the end of the first stage, when a very large child presented by the breech. Dr. Haskin, my colleague, was summoned in consultation. Dilatation being complete, we waited an hour, when, as the breech showed no tendency to engage, the patient was anesthetized, and a dead child, weighing twelve pounds, delivered. The death of the infant was undoubtedly due to delay in delivering the after-coming head, which offered the most annoying resistance to all efforts at extraction. The mother's recovery was perfectly normal.

On October 15, 1894, I was again summoned to attend the woman in confinement. The first stage lasted about eleven hours. At its conclusion I determined upon immediate artificial delivery. This decision was based upon the patient's extreme desire to give birth to a living child, and also upon the fact that previous experience with her led me to hope for nothing were the case left to the natural forces.

Dr. Haskin was again summoned, and the patient anesthetized. With moderate difficulty I delivered her of a large living child. The head lay extremely high above and anterior to the symphysis pubis; yet, despite the fact that the child was the largest she had ever borne, the delivery was accomplished with greater ease than in either of her previous labors. I attributed this fact to the early

interference while the mother's tissues were still relaxed and moist, and the contractions vigorous.

I may here add that the whole labor was conducted upon strictly surgical principles. Great pains were taken to insure perfect asepsis of the patient, instrument, and operator. The placenta was slightly lacerated in delivery, but came away intact. The uterus contracted firmly.

Convalescence proceeded without interruption until the eighth day, when the nurse called my attention to a small papule at the angle of the nose. The lesion, which had existed for several days, but attracted no attention, now presented about its base an angry appearance, very suggestive of erysipelas. The vulva was immediately sealed with mercuric-chlorid gauze compresses, which were renewed only when absolutely required, and with the utmost care and rapidity.

At the end of forty-eight hours the eruption quite covered the face, and, after a short delay, during which time the cervical and submaxillary glands became enormously enlarged, crept along the post-cervical region, and extended down the spine. The spreading of the eruption was from this time on uninterrupted. The entire surface of the body as far as the thighs became involved. The vulval and anal regions escaped. Various local measures were adopted in succession, but all finally discarded in favor of an ointment containing equal parts of ichthyol, lanolin, and water. Internally quinin, stimulants, and at times iron, with a diet of milk and raw eggs, were principally administered. The patient's temperature ranged irregularly from normal to 104°. The eruption remained about fourteen days.

On November 7th, after the patient's temperature had remained normal for twenty-four hours, and convalescence was apparently established, she was seized with violent pain in the region of the heart, which I attributed to neuralgia, but for the control of which I was forced to resort to a hypodermic injection of morphin. About three hours subsequent to this attack the woman was seized with severe pain of a similar character in the right foot. The most painstaking examination of the foot and leg revealed absolutely nothing abnormal. There was no edema or induration along any of the lines of bloodvessels or lymphatics.

On the following morning the pain was a trifle less severe, but still present. Upon this examination I detected decided coldness of the affected member, and upon further examination found an entire absence of pulsation in both tibial arteries. There was complete anesthesia of the entire foot. During the following hours there developed a marked ecchymosis of the surface, extending over the foot and the lower third of the leg.

From this time on to the date when amputation became necessary the local condition was one of progressive decomposition. The patient's general condition, however, remained good. The temperature ranged from 99° to 100°. Two days prior to the operation it rose to 103.5°, but almost immediately fell again.

On November 20th it was deemed advisable, on

account of the unfavorable surroundings, to remove the patient to St. Luke's Hospital for the operation. The following day Dr. Owens amputated the limb about six inches above the knee. The proximal end of the femoral artery was found to be occluded by a clot for a distance of three inches. This was cleaned out, and the operation completed. Below the line of amputation and surrounding the original point of thrombosis was found a large abscess.

The patient's recovery was tedious, but perfect.

In this case it is manifest that infection could not have occurred through the genital organs, as there was throughout the entire course of the disease no evidence whatever of morbid disturbance in this region. Involution was practically uninterrupted. The lochia were normal in all respects, disappearing entirely on the fifteenth day. There could be elicited no unnatural tenderness of the uterus or any of its appendages throughout the whole puerperal period.

The cutaneous erysipelas must, therefore, be looked upon as entirely independent of the puerperal state, and the fact of its accidental appearance at this particular time renders the case one of more than ordinary interest, both from an obstetric and a pathologic point of view.

Laying aside the question of etiologic relationship, we find a great deal of interest attached to the question as to what modifications of the disease were induced by the puerperal state, and whether the rapid and extensive spreading of the eruption, together with the grave complications following, were not largely favored, at least, by general systemic conditions incidental to the lying-in period.

In puerperal convalescence, even when the transition is perfectly performed, the organs of elimination are taxed almost to their physiologic limit; the restoration of contused and edematous tissues to the normal state, and the awakening to activity of the lacteal glands, all combine to load the eliminating channels with a tremendous amount of waste material, thereby calling upon the excretory organs for a greatly increased activity. Here we must also remember that these same organs have, in a majority of cases, become more or less disturbed during the later months of pregnancy.

When superadded to such a condition we have an invasion of the system at any point by pathogenic micro-organisms, we cannot be surprised that the toxic products of their activities should remain in the lymphatic vessels and spaces, acting detrimentally upon the uninvaded tissues, and diminishing greatly their power of physiologic resistance. Specific germs of any variety find in this effete material an inviting culture-soil in which to thrive and increase in activity.

Again, going beyond the puerperal period, we may possibly look for other factors favoring the

complications which followed the erysipelas. We know that during the later months of pregnancy, as well as during the puerperium, the blood undergoes certain alterations that render it prone to coagulation.

Tarnier in 1878 referred to the discoveries of Andral and Gavarret regarding the changes undergone by the blood during pregnancy, and emphasized the relative importance of the increase of fibrinous elements in the blood of pregnant women during the last three months—an increase always present and frequently in proportions almost pathologic. Without venturing into a discussion regarding the predisposing and exciting causes of these changes in the blood, it is sufficient here to call attention to the fact that they do occur, and that they exert an influence upon the course of many puerperal diseases.

It would perhaps be more difficult to assert that the "physiologic leukocytosis" of pregnancy first observed by Virchow proves another factor favoring thrombosis. We know that when coagulation occurs in living blood the white corpuscles play an important rôle in the initial process, by reason of their ready attraction and adhesion to portions of the intima that have undergone structural alterations, however slight. Their extremely rapid increase at the end of pregnancy is probably in anticipation of their requirement as carriers of waste-products subsequent to parturition.

This general inopexia in puerperal patients when exhibited in a pathologic degree is occasionally expressed in thrombotic formations within the pulmonary arteries, heart, and venous terminals.

Fordyce Barker¹ reports a case of arterial thrombosis occurring in the left leg, in which there had been no arteritis and no demonstrable cause for the accident. He attributes many sudden deaths during the third and fourth week of puerperal convalescence to occlusion of the pulmonary arteries by emboli.

With this general condition of the blood present, then, we are prepared to appreciate the profound impressions produced upon the circulatory system of parturient women by the invasion of the tissues by acute disease of any nature. The existence of high or prolonged temperature, with its resultant anemia, or influences of any nature that tend to vitiate the blood, would lead us to anticipate some such process as thrombosis, even regardless of the presence of micro-organisms.

A great deal of interest during recent years has centered upon the relationship existing between erysipelas and puerperal fever. Since the time when Fehleisen discovered the streptococcus erysipela.

¹ Puerperal Diseases.

tosus, bacteriologists have sought by experimental evidence to place these two diseases in their proper etiologic relation.

Gusserow reports the cases of a number of puerperal women who developed cutaneous forms of erysipelas without involvement of the genital organs. He also mentions several cases of puerperal fever complicated by erysipelas at a later stage. These cases, together with his experimental investigations, he considers as strong evidence that erysipelas cannot cause puerperal fever. According to Senn, Doyer and Winckel both determined to their own satisfaction, by means of cultivation and inoculation-experiments, that there does exist a direct relationship between the virus of erysipelas and that of puerperal fever. Doyer maintains the identity of the two bacteria. Senn himself concludes his article with the statement "that puerperal sepsis from infection with the streptococcus of erysipelas can only occur when the streptococcus is brought in direct contact with an absorbing surface in the genital tract."

Senn's deductions might at first glance appear to receive some clinical support from the history of the case herein reported. The inflammation extended almost to the vulva, and yet a protection of the genitals from outside infection appeared to avert the danger; still, while this precaution closed the most important avenue of invasion, we may readily see that independently of infection from this source secondary foci of suppuration might have occurred in the parametric tissues, or even in the uterus itself, giving rise to puerperal sepsis. In other words, the infected embolus might have elected one of the pelvic arteries in place of the popliteal.

The theory of Gusserow and others, that puerperal sepsis, due to the streptococcus of erysipelas, always implies direct contact of the germs with absorbing surfaces of the genital tract, is founded upon almost purely experimental evidence, the most valuable variety of scientific research, but at times misleading. These observers obtained pure and tested cultures of the streptococcus, and injected them into the peritoneal cavities of rabbits, producing no disturbance whatever, the local immunity being confirmed by post-mortem examination. Upon these experiments they base their conclusions. By somewhat similar methods Fehleisen and others claim to have practically demonstrated the non-pyogenic nature of the streptococcus of erysipelas, and that when suppuration does occur during the course of the disease it is due to mixed or secondary infection with pus-microbes. Other equally observing men, after conducting like investigations, have arrived at almost opposite conclusions. Such apparently non-reconcilable results are probably to be accounted for by the existence of physiologic and pathologic

variations in the quality and conditions of the tissues in the individual animals employed. Aside from demonstrable morbid changes in tissues there remain certain intrinsic germ-neutralizing and combative elements that defy all attempts at analysis. This "physiologic resistance," as we term it, varies greatly in different normal individuals.

Results obtained by inoculation-experiments are definite and reliable in many instances; but in others they are extremely misleading and open to serious objection unless certain allowances are carefully made in summing up conclusions. I believe that in these experiments too little allowance is often made for the condition of the tissues in which the micro-organisms are found. Inoculation-experiments are usually performed upon animals in normal health, which naturally enjoy an immunity not found in patients from whom the cultures were obtained. Tissues weakened by chronic alcoholism, the cachexias of malignant disease, prolonged disorders of the excretory organs, as well as the zymotic diseases, lose much of their resisting and neutralizing powers when brought in contact with pathogenic micro-organisms; and an inoculation that yields negative results in a healthy animal would oftentimes produce profound impressions upon the tissues of a diseased individual.

An inoculation in the peritoneal cavity of a healthy guinea-pig with the streptococcus of erysipelas might give rise to no serious disturbance, but will anyone maintain that the injection of the same material into the abdomen of a typhoid-fever patient during the fourth week of the disease would result similarly? Could the same exhausting influences affecting the puerperal patient whose case I have related have been applied to the tissues of an animal previous to its inoculation the results would in all probability have been of a very different character.

The experiments of Gusserow, therefore, are wanting in proof regarding the non-transmissibility of erysipelas to the pelvic organs through the circulating fluids of the body in patients already suffering from the disease, and Senn's statement appears to me not sufficiently supported to be accepted without some qualification.

In a like manner, regarding the pyogenic properties of the streptococcus of erysipelas, may we not concede that while pure cultures of these bacteria injected into vigorous normal tissue do not give rise to suppuration, the same germs, introduced into tissues presenting a more favorable culture-soil and less resistance, might develop pyogenic qualities? In many cases of complicated erysipelas the streptococci have been found in abscesses in almost all parts of the body. Their presence there, even in company with other bacteria, should be evidence enough that they are in a measure concerned in the

destructive processes about them. There is no logical reason why the pelvic organs should escape infection through the medium of septic emboli when such accidents occur in other parts. I regret keenly that in the case herein reported cultures were not obtained from the abscess, and that our conclusions must therefore remain of a purely clinical character.

Endocarditis, more or less pronounced, was probably present in this case, although repeated examination of the heart yielded negative results. Judging from the precordial distress immediately preceding the blocking of the popliteal artery, however, as well as from the history of somewhat similar cases in which autopsies were obtained, we may assume the presence of a septic endocarditis resulting in thrombosis at some point within the left heart or aortic valves.

The transference of bacteria to this region presents another interesting feature, and implies in my judgment the existence of other factors than the mere presence of cutaneous erysipelas. The eruption in this case, while of extensive area, was not of a deep or phlegmonous type. There were no superficial suppurative points discoverable, no sloughing of the surface or overtension of the tissues.

In these less severe varieties of the disease the invading germs are believed to limit their ravages to the lymphatic vessels and perilymphatic spaces, and that only in those graver cases marked by deep infiltration and extensive tissue-destruction do the micro-organisms actually penetrate into the blood-channels. It is at this point that the puerperal state, in conjunction with the preceding weeks of illness, plays an important rôle in favoring invasions beyond the ordinary limit. The overworked secretory organs fail in elimination; the lymphatic vessels and the surrounding spaces are choked with swarms of active germs, and the debilitated tissues offer but feeble resistance to their advances. Conveyed in the substance of leukocytes or in free colonies circulating in the liquid portion of the blood, the streptococci select the surface of the endocardium as the site for mural implantation at some point probably roughened by previous disease. Their passage through the pulmonary tissues, without producing destructive changes, remains a remarkable fact.

From a clinical point of view the case that I have reported is of extreme interest to the obstetrician. It should remind us that unexpected accidents frequently occur in the midst of an apparently normal convalescence, and that the intercurrent of any disorder during the puerperium should be regarded with gravity and the prognosis be guarded; and we are also reminded that all complications of the lying-in state do not originate within the pelvic

organs. While an ardent advocate of extreme aseptic precautions in all cases, I must aver that such attentions are often bestowed at the expense of the patient in other ways. The obstetrician must note carefully every condition of the pelvic viscera, but in the meantime must not forget the patient. I am also impressed with the well-known fact that while an ideal puerperal condition constitutes in reality a physiologic process, it certainly prepares the way most admirably for pathologic sequences.

CLINICAL MEMORANDA.

COMPLETE PROLAPSE OF THE UTERUS, WITH INCOMPLETE ABORTION, IN A GIRL SIXTEEN YEARS OLD.

By J. MASON HUNDLEY, M.D.,

OF BALTIMORE, MD.;

ASSOCIATE PROFESSOR OF DISEASES OF WOMEN AND CHILDREN IN THE UNIVERSITY OF MARYLAND.

I REPORT the case herewith detailed believing it to have some points of general interest. In an experience of eight years in dispensary-work, with a large amount of clinical material at my command, I have never seen a similar condition in one so young.

Ellen S., a colored girl, sixteen years of age, presented herself at the University of Maryland Dispensary, with the following history: She had always menstruated regularly and had been in good health up to a few days before her visit to the dispensary, on January 3, 1895, when she was seized with pain in the lower abdomen and difficulty in urinating. She was also obstinately constipated. An examination was not made at this time, but the patient was given a mixture of magnesium sulphate and compound tincture of gentian for the constipation. This combination, we have found, often relieves pelvic pain when dependent upon constipation, which is not infrequent. The girl returned in a few days, unimproved, and was again given the same solution. Upon her third visit, still not being relieved, she was examined. I was more than surprised to find a procident uterus, and one presenting an appearance unlike anything I had ever seen before. The uterus protruded from the mouth of the vagina about three inches, and there was a rolling out of the mucous membrane of the cervical canal.

I first thought there was a chancroid of the cervix, but upon closer inspection I found the appearance to be due to the greatly thickened mucous coat of the cervical canal. I now questioned the girl more closely and she positively denied having missed her sickness. She maintained that she had had no bleeding from the uterus, that she had always been well up to a few days before presenting herself at the dispensary. The cervical canal easily allowed the introduction of an aseptic finger, which I introduced within the uterus and brought away nearly a handful of fetal remains, but no fetus. The pregnancy could not have been far advanced, for there was no well-formed placenta. There was no evidence of blood about the person of the girl, nor had there been any blood coming from the cervix before the extraction of the secundines; only issuing from the cervix drop by drop was a watery fluid. There was no

laceration or marked relaxation of the perineum. The cavity of the uterus measured four-and-a-half inches in length. After being thoroughly curetted with the finger the uterus was replaced and put in its normal position, where it remained. The girl was given fluid extract of ergot to assist in the process of involution, and told to go home and go to bed, where she was looked after until the uterus had nearly regained its normal size. Douches of hot water with borax were given in conjunction with the ergot, and the patient was not allowed to become constipated.

There are some points of interest in connection with this case. First, through ignorance or design, the histories obtained from the class of patients visiting dispensaries have often no bearing whatever upon the case in hand, and, therefore, it is always best to make a physical examination in each and every case, unless there be clear contraindications. The second interesting point in the case is a procidentia recently pregnant uterus in a girl sixteen years of age who had never borne a child to full term. There was no evidence that she had given birth to a child, no striæ upon the abdominal walls and no evidence about the outlet of the birth-canal. The procidentia seemed to be of recent origin—whether it was brought about by the girl herself, or someone else pulling upon the vagina or uterus, thereby hoping to effect an abortion, I am unable to say—I could get only the meager history related. Another point brought out by this case is the curettement of the uterus with the finger. I do not think one can emphasize too strongly the great advantage this method has over that with the ordinary curet. With the finger one can appreciate what is to be done and where to do it. One knows when the uterus is thoroughly emptied of its contents, and, however soft and yielding its walls may be, there is no danger of going through them, as is now and then done, even in the hands of the best operators. I once had the misfortune of pushing a curet through the uterine wall, and since then I never use a curet without first introducing my finger within the uterine cavity to find out the true condition of things. If there be simply vegetations to be gotten away I may use the curet; otherwise I use the finger.

TRAUMATIC NEURITIS FOLLOWING FORCEPS-DELIVERY.

By J. C. WELCH, M.D.,
OF BELLEVUE, PA.

THE following case came under my observation while a resident physician at the Philadelphia Hospital, and is reported as an infrequent complication of the puerperium.

M. F., 20, white, Irish, a primipara, was of good family and personal history, so far as could be ascertained, with the exception that the mother died in childbirth. The fact is interesting in connection with the pelvic measurements of the patient; these were:

	Cm.
Iliac spines	24
Iliac crests	26
External conjugate	20
Right diagonal	19½
Left diagonal	19½
Between trochanters	29½
Circumference of pelvis	88

The position of the fetus was the first position of the vertex. At 3 A.M. the patient fell into labor; the pains were regular and quite severe. At the end of 36 hours the os was well dilated, the membranes had ruptured, and the patient was quite exhausted. It was evident that the termination would not be a favorable one without interference. Forceps was applied at the superior strait and the head was brought down to the perineum without difficulty, but could be not delivered. After successive attempts at delivery with forceps it was finally accomplished after rotating the head considerably. The perineum was badly torn and there was a double laceration of the cervix on either side, extending into the vaginal vaults. The child was asphyxiated, but was resuscitated in the usual manner, and seemed to be doing well, but died suddenly about seven hours after its delivery.

After delivery the patient suffered greatly with pain in the back and particularly in the lower extremities, chiefly in the lumbar region and in the posterior portion of the limbs, and this was so severe as to prevent sleep. The external genitals became much swollen and on the third day the temperature rose to 101.4°, but these symptoms did not continue.

The pains gradually lessened in intensity and at the end of 2 weeks had disappeared from the right limb; at the end of 7 weeks she left her bed and was able to walk with difficulty. A vaginal examination at this time revealed no swelling or induration or the lumbosacral plexus, but there was exquisite tenderness on the left side. There was marked tenderness on pressure along the course of the sciatic nerve of the left limb, particularly at its emergence from the pelvis. There was also soreness of the muscles of the entire posterior surface of the limb, more intense between the great trochanter and the tuberosity of the ischium and gradually diminishing toward the heel. The patient stated that she had a dull aching pain, constantly present from the lumbar region along the posterior portion of the limb to the heel, and at times suffered with short paroxysms of a sharp, darting pain here. These paroxysms occurred at night when asleep as well as when the limb was being exercised.

The case remained under observation for 2 months, and during this time showed great improvement. The lameness disappeared, the pain became less acute, and the paroxysms very infrequent.

EPILEPTIFORM CONVULSIONS OF MALARIAL ORIGIN.

By E. W. LUDLOW, M.D.,
OF URBANA, O.

F. S., aged seventeen years, gave no history of epilepsy in the family or of attacks previously. In August, 1894, the patient was seized with sudden pain in the head and neck, and then became unconscious and so remained for about two hours. After the attack, which occurred in the afternoon, the lad was stupid and drowsy, and slept during the ensuing night. The next day he had mild convulsions at intervals of a few hours, the headache continuing. This condition kept up for about two weeks. During the fall and winter of 1894 the young man had chills and fever, with fits at irregular periods. About the first of January, 1895, his con-

vulsions occurred every other day, always in the afternoon between four and five o'clock. The fits were severe, and he would not be able to resume work until the next day. During this time, from the beginning of the fits until January 1st, the patient was away from home working, and his condition, except for the fits, was good. I saw him first on his return, January 4th, and he had just had a fit. I could not get a satisfactory history, and lost sight of the case until June 25, 1895, when I obtained the history given. The lad had been having fits at regular intervals for over six months since I had seen him. The indications were that the cause of the convulsions was malaria, and quinin was given so as to anticipate the next seizure—which never came. Anti-malarial treatment was continued for about two weeks, when the patient disappeared. He turned up about September 1st, and reported that he had had no more fits. Quinin sulphate was used in fairly large doses, and had not the least ill effect.

MEDICAL PROGRESS.

The Pulse of Mitral Stenosis.—As the result of an elaborate study, STEEL (*Medical Chronicle*, September, 1895, No. 6, p. 409) sums up as follows his views upon the character of the pulse associated with mitral stenosis: In healthy individuals the pulse varies; some have a normal pulse—tension fairly "high;" others a normal pulse—tension fairly "low." In mitral stenosis this physiologic individual difference must not be lost sight of. It would appear that most cases of the lesion pass through three stages: (a) A stage in which auscultatory signs (presystolic murmur, etc.) are best developed, while symptoms of disturbed circulation are feebly developed or absent, and in which the pulse is regular and of high tension, showing a well-developed tidal wave. There is, of course, nothing characteristic of the lesion in such a pulse. (b) A stage in which symptoms of disturbed circulation are more or less pronounced, and which is accompanied by an irregular pulse of the kind that may be indicated as "typical." A tracing of such a pulse shows a series of low-tension ill-developed curves, interrupted from time to time by a curve of fairly good tension with the tidal wave developed; or a series of good-tension curves may be interrupted by an occasional low-tension and ill-developed curve—that is to say, one or other curve may predominate. A similar tracing is met with in simple muscle-failure of the heart. It is not pathognomonic. Many patients die in this stage. (c) The pulse of the second stage becomes one of low tension, and may be regular or irregular as regards the height of the upstrokes of the tracing, etc.; more often the former. In many cases this stage is never reached, the patient dying in the second stage. On the other hand, the third stage is often reached and recovered from, stage two and even stage one being resumed. A low-tension pulse (third stage) is often temporarily assumed from a variety of causes (pyrexia, etc.). Few patients die with a first-stage pulse, except from some complication. Physiologic low tension must be borne in mind in estimating the prognosis. Certain patients have low-tension pulses from first to last. The three stages referred to are mere generalizations. It must not be supposed that excep-

tions are infrequent. The bigeminal pulse is frequently met with in mitral stenosis, but is also common in simple "muscle"-cases. In aortic incompetence even, it is by no means rare. It should not be associated with any one lesion, and digitalis is commonly a factor in its production. No pulse is pathognomonic of mitral stenosis. Each type of pulse is also met with in other diseases. A patient with mitral stenosis may show at different times and under different circumstances extremely high tension (especially under the influence of digitalis) and extremely low tension. In the stage described as the second the pulse-tracing may be regarded as a combination of the characteristic curves of the first and third stages. The second stage may not be represented.

A Case of Acute Leukemia.—SEELIG (*Deutsches Archiv für klinische Medizin*, Band 54, Heft 6, p. 537) has reported the case of a boy, eleven years old, who at the age of nine had an attack of scarlet fever, complicated by nephritis. From this illness the boy had never wholly recovered, remaining pale and eliminating considerable albumin in the urine. For a period of five weeks there had been excessive fatigue, with nausea, headache, and mild gastric disturbance. Examination disclosed enlargement of the spleen, but the blood presented no abnormality. There was a brief interval of remission in the symptoms, but these returned with their previous intensity in the course of sixteen days. The pallor was now marked; the face and especially the eyelids appeared edematous, but did not pit upon pressure. The gums were swollen, and in places bled readily on pressure. The lymph-glands in the axillæ, groins, and flexures of the elbows were distinctly enlarged. The liver was enlarged, and the spleen was also increased in size. Examination of the blood showed an enormous increase in the white corpuscles, with a preponderance of myelocytes. As the case progressed, pain and tenderness appeared in the right ankle and the foot, together with enlargement of the veins. Small movable nodules appeared behind the ears and in various situations upon the thorax and abdomen. The temperature rose above normal, and petechiæ appeared upon the anterior surface of the body. Hematemesis occurred, the patient grew progressively worse, and finally died. Upon post-mortem examination, in addition to the superficial hemorrhages and nodules, the spleen and liver were found to be enlarged. The thymus was persistent. The heart was enlarged, and the precordial surface presented many white, moderately firm nodules, in the midst of which were numerous hemorrhages. The lungs were slightly emphysematous, and presented ecchymoses beneath the pleuræ. A number of small indurated lymph-glands occupied the hilus of the spleen. The mesenteric glands were enlarged. The kidneys also presented upon the surface nodules and hemorrhages. The mucous membrane of the stomach and intestines contained prominent white lymph-follicles and a number of small hemorrhages. A collection of enlarged lymph-glands occupied the transverse fissure of the liver.

Fetal Endocarditis in Association with Deficient Interventricular Septum.—RAILTON (*Lancet*, No. 3754, p. 327) has reported the case of a boy, four years old, who had

always been delicate, and did not walk until the eighteenth month, and subsequently was unable to play about like other children, being easily exhausted and out of breath. He had frequently complained of pain in the region of the heart, but had not suffered from articular rheumatism or shown any blueness of the lips or fingers. For three weeks following exposure to cold the child had been worse, and on coming under observation presented well-marked symptoms of broncho-pneumonia. The area of cardiac percussion-dulness was greatly increased. No murmur was audible. The patient grew steadily worse, the temperature rose to 106°, and death took place after twenty-seven days. Four days previously a systolic murmur was audible over the right ventricle. Upon post-mortem examination the lower lobes of both lungs were found consolidated, while islets of broncho-pneumonia were scattered over the rest of the lungs. The heart was large, principally upon the right side. The tricuspid valve was the seat of large verrucose vegetations covered with a deposit of fibrin. Close to the tricuspid orifice were a few other vegetations on the auricular edge, and one recent irregular ulcer. The remaining orifices and valves were normal and the ductus arteriosus and foramen ovale were closed. There was a deficiency of the interventricular septum about the undefended space large enough to admit a quill. This opening was larger at the side of the left ventricle than on the right side, where it ended between the insertion of two cusps of the tricuspid valve nearer to the right auricle than to the ventricle. The edges of this orifice were quite smooth. It seemed evident that the lesion of the tricuspid valve had started during fetal life, and that the endocarditis had also continued its evolution subsequently to birth.

Successful Bilateral Ovariectomy during Pregnancy.—MERKEL (*Münchener medizinische Wochenschrift*, 1895, No. 37, p. 864) has reported the case of a woman, thirty-six years old, who during her seventh pregnancy presented melancholia of progressive character. Upon examination the uterus was found to be enlarged in a degree corresponding with the fourteenth week of pregnancy. To its right was a movable, tensely elastic tumor, as large as a child's head, which was taken to be a degenerated ovary. The left ovary appeared to be cystic, and about as large as a fist. The mental symptoms became aggravated, and the patient threatened to commit suicide unless released from the hospital and sent home. This was accordingly done, and, in view of the possibility of rotation of the pedicle of the right ovary, operation for the removal of the ovaries was undertaken. That state of affairs was found to exist. The twisting was released and the pedicle ligated and severed. Upon the left was found a parovarian cyst, which was removed. The uterus was not disturbed. The abdominal wound was closed, and an appropriate dressing applied. Upon emerging from the anesthesia the mental disturbance was entirely gone. There were no complications, and the pregnancy pursued a normal course, delivery of a living child being successfully effected, and the patient's health, both mental and physical, continuing undisturbed.

Retention of Urine of Malarial Origin.—OCHEVSKY (*Bulletin Medical*) has reported the case of a young man,

living in a malarial locality, who had suffered with complete retention of urine for two days. The patient had for five years suffered from malarial fever, was anemic, and presented enlargement of the liver and spleen. Attempts at catheterization were ineffectual, evidently from contraction of the sphincter vesicae. Both quinin by the mouth and morphin beneath the skin failed to bring relief. By the third day the bladder had become enormously distended, and the suffering was intense. From time to time, at fairly regular intervals, the patient was seized with paroxysms of vesical spasm. During the night coma set in. Upon the conviction that the disturbance was of a malarial origin 7 drops of Fowler's solution of potassium arsenite, followed by 15 grains of quinin sulphate, were injected subcutaneously. The result was remarkable, the patient urinating spontaneously an hour later. The urinary retention reappeared a week later, but was finally dispelled by renewed injection of quinin and arsenic.—*Ann. des Malad. des Organes Gen.-Urin.*, 1895, No. 9, p. 854.

Syngomyelia of Akromegalic Type.—LORRAIN (*Progrès Médical*, 1895, No. 17) has reported the case of a man, forty-two years old, who presented enormous enlargement of the hands with decided kyphosis. There existed, besides, atrophy of the muscles of the upper extremities and of the shoulder-girdle, derangement of sensibility, involving especially pain and temperature, and atrophic change in the bones and skin of the upper extremities. Numerous nodular thickenings were detectable in the course of the right ulnar nerve.—*Centralbl. f. Inn. Med.*, 1895, No. 37, p. 906.

For the Preservation of Organic Urinary Sediments.—FISCHEL (*Prag. med. Wochenschr.*, 1895, No. 12) recommends centrifugation, followed by washing of the sediment to the point of decolorization with a physiologic salt-solution. After decanting the supernatant fluid a mixture of equal parts of glycerin and water is added, containing 2 per cent. of a saturated alcoholic solution of thymol. The organic matters may thus be preserved for months, and are as susceptible to stains as those contained in recent urine.—*Ann. des Malad. des Organes Gen.-Urin.*, 1895, No. 9, p. 853.

THERAPEUTIC NOTES.

The Employment of Borax in the Treatment of Epilepsy.—As the outcome of a considerable clinical experience, FÉRE (*Revue de Médecine*, 1895, No. 9, p. 750) has arrived at the conclusion that while borax frequently has little or only passing effect in the treatment of epilepsy, the drug is useful in some cases and may be employed when the bromids fail. Some care must be exercised in the use of borax as it is capable of causing derangement of renal function.

For Hay-fever.

R.—Mentholis	gr. xx.
Olei amygdal. dulcis	ʒij.
Acidi carbolici	℥x.
Cocain. hydrochlorat.	gr. vj.
Unguent. zinci oxidi	ʒss.—M.

S.—Introduce into nares.

SMITH, *Medical Record*, No. 1300.

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MEDICAL STATISTICS.

We have on several occasions called attention in these columns to the faulty and irrational way in which statistics are often used to prove medical theories. Figures are not so stubborn as they are commonly accredited to be, but are as yielding as dough and can be kneaded into any form that one desires. They can be made to prove or disprove anything, if one's audience is unlogical enough to accept his reasoning. It was the sophists of old who, with figures, proved that the elephant could never overtake the tortoise, if the tortoise had ever so little advance, and ever since, though we may not wilfully seek to deceive our hearers, we appeal to statistics as the final tribunal to prove that one is two and black is white, and that one medicine has curative powers and that another has not.

Counting heads is a very simple procedure, and a schoolboy in the lowest grade can do it; but before we begin we must have an intelligent conception of a head, for surely it would be a grievous error under the circumstances to count feet as heads.

Enumeration, however, is a comparatively easy task, and our most serious mistakes are made when

we endeavor to judge of the relation of one group of aggregates to another.

First, we have a quantitative relation. If, for example, we have in one year x deaths from a given disease, and in another year a greater number, represented by y , the question arises, Is y greater relatively or absolutely? If the population were to remain stationary, then a comparison could at once be made, but an increase in population might in itself be sufficient to account for the greater number of deaths. Having then made certain that y is *relatively* greater than x , we may look about for the causes of this increase.

In his *Theory of Statistics*, Meitzen states that "the judgment of causal connection is reached only after we have taken up in succession the possible causes and carefully analyzed them, much in the nature of an experiment;" beginning with the most probable cause and examining successively each probable one until a cause sufficiently well grounded is found. How seldom do we see this rule observed in medical statistics? It may be that an increase of crime has "been shown to coexist with an increase in the importation of wool," that the number of marriages in a country increases as the price of rye decreases. Are these facts in causal connection or are they unrelated?

Vienna has a death-rate of 43 per 1000, London of 18 per 1000. In the former city an average of 42 persons inhabit one building, in the latter only 6.5 persons. Are these two sets of facts in causal relation, or is it that Vienna has such a high death-rate because every year one-third of all the births occurring in that city are illegitimate, and, as is well known, illegitimate children have a very high mortality? This example is cited merely to show how in any case there may be a complexity of operative factors and, unless all are considered, how erroneous may be the conclusions arrived at.

With these facts in mind let us view the statistics of the antitoxin-treatment of diphtheria, and see if all sources of error have been eliminated in their collection and presentation.

As scientists we must consider the matter without prejudice one way or the other. Neither the favorable results that have been experienced in individual hands, nor the enthusiasm of others, nor yet the dogmatic opinions of authorities ought to influence the study of figures.

From the remarks that follow we trust that our position on the question of the antitoxin-treatment

of diphtheria will not be construed as in any sense antagonistic. This particular therapeutic procedure is used merely as an example, and our words are equally applicable to any new form of medication, whatever may be its merits. We merely ask that medical men, before placing reliance on statistics, presented indiscriminately, view them from all sides and refuse to express judgment until a careful analysis has been made. It is because we feel that there is some efficacy in the antitoxin-treatment that we are all the more anxious that it should not be brought into disrepute by its overzealous friends.

We find it stated, for instance, that under the use of the antitoxin the mortality of diphtheria has been greatly reduced. What are the proofs? First, in hospitals in which the remedy is used the figures show a great diminution of the death-rate as compared with former months or years when it was not employed. Here is a fact. What are the possible causes at work?

Gottstein in commenting upon a paper read before a Berlin medical society, showed how easily errors creep in when we judge figures with a biased mind. It was maintained that the mortality of diphtheria in the city of Berlin was formerly one-half that of the Berlin hospitals, because only the severer cases were sent to the latter for treatment. With the beginning of the new treatment the patients were sent in much greater numbers to the hospitals, almost twice as many admissions being recorded, and the mortality-rate fell. Now, if the premises are correct, and every case of diphtheria in Berlin had been sent to the hospitals, irrespective of any treatment, the death-rate from this disease in the hospitals would have been the same as that of the whole city—a reduction by this means alone of 50 per cent.

Thus it will be seen that before we can judge of the value of a remedy from hospital-statistics we must have a correct idea whether or not the general relation has been disturbed. It is claimed by some that the total death-rate from diphtheria in New York and Boston has been much lower in the past six months than in any previous year, and the result is attributed to the somewhat general use of the antitoxin. Henry W. Bettman, in THE MEDICAL NEWS of August 10, 1895, p. 145, clearly shows how this reduction was brought about in Boston by improved methods of diagnosis. "Cases of diphtheria that formerly would have been called simple sore-throat" are reported now, because of

bacterial analysis and efficient inspection, so that in 1894 there were nearly twice as many cases on record as in any previous year. Of course the death-rate must fall under these circumstances. The wonder is that it does not fall more. But let it be established without a doubt that under the use of the antitoxin the percentage of cures has increased, are there no other factors that contribute to this result?

We have spoken of bacterial analysis. Now it is pretty nearly certain that many persons who were considered to be suffering from a mild form of angina were in reality infected by the Klebs-Loeffler bacillus, and thus coming under treatment early were speedily cured or saved from becoming seriously affected. Again, when a greater number of all the cases occurring in a city are sent to the hospitals, the better nursing and attention that those who are sent there receive must materially affect the general mortality.

But another factor may influence the result, and it is applicable to all new remedies and operations. The physician when making trial of the antitoxin is extremely solicitous for the recovery of his patient, and it is unfortunate that he cannot devote to every patient that comes under his care that close attention that he gives when a new remedy or treatment is upon trial. Under the latter conditions visits are made oftener, work that is usually relegated to the nurse or attendant is performed personally, the temperature is more frequently recorded, and all little changes that occur are noted. Can anyone doubt that this must be productive of better results than when some routine plan of treatment is indulged in and left for performance largely in the hands of untrained caretakers?

Supposing that the antitoxin and a syringe were given to the mother of a diphtheric child, with instructions to inject a dose three times daily as directed, and the doctor would drop in once in twenty-four hours to watch the case, would we have such favorable results to chronicle?

Until we have two sets of cases side by side, both equally well nursed and attended to, the one treated with the antitoxin, the other without, we must be extremely guarded in our opinion as to the probable cause of the diminished mortality.

We shall not speak of those wilful misrepresentations of statistics that omit such cases as are beyond cure, much after the fashion of a celebrated reformatory-superintendent who sent all his bad boys to the penitentiary, and then reported a high percentage

of reform in the remaining number. It is perfectly proper, when a new remedy is on trial, to leave out of consideration those unfortunate cases in which death occurs before sufficient time has elapsed to study the effect, but it is extremely unfair and dishonest to compare such selected cases with the remainder, good, bad, and indifferent. There is danger, on the other hand, that we will employ a certain remedy only as a last resort, and then condemn it, quoting in justification our failures.

The root of the whole matter lies in the fact that *statistics* is a *science*, with laws as well established as other sciences, and amateurs who dabble in it make mistakes as amateurs in other fields are likely to do.

To accept a remedy, to utter dogmas concerning it, or to reject it as a failure on the basis of figures alone, when such figures have not been carefully studied, is too much the tendency of many of our time, and because of this unscientific haste the medical profession is often held up as a laughing-stock before the world.

A HUMBUG AT LOURDES.

It is scarcely worth while for a medical journal nowadays to call attention to cases of alleged faith-healing at a religious shrine or under any form of religious excitement. The essential characteristics of these cases are so well known to science, and generally so well understood by intelligent men, that to dwell upon them is usually only to waste space and opportunity. The flagrant offenders in these cases are not, as a rule, the patients themselves, for in most instances these are self-deluded; but they are the ecclesiastic authorities, who persistently parade these cures and obstinately palm them off as evidences of a supernaturalism which they themselves should know well enough has had no hand in the business.

It is rather the mode now, in our *fin de siècle*, for ecclesiastics of all denominations to affect to believe that theology has no real quarrel with science; that when each is shown in its true light the lines of convergence are seen to be approaching to a gratifying extent. Scientists await the evidences of this approach with judicial calmness; but meanwhile they note that no spurious cases of demon-possession, witchcraft, and faith-cure arise in any quarter of the earth, but that they are hailed by the ecclesiastic party with unbounded delight and vociferous acclaim as the theologic contribution to the love-feast of science and religion. It is therefore a

matter of considerable interest and importance to note the recent exposure of a fraud at Lourdes, because the case for a short time baffled common sense as well as science, and gave the priestly party a conspicuous opportunity for unctuous but premature jubilation.

We refer to the case of Delannoy. This impostor was a warder in the Paris hospitals from 1877 to 1881. He thus became familiar with the superficial appearances of many diseases, and also became so enamored with hospital-life that this became for him the ideal of existence. With almost nothing to do and with others to do it for him—this in brief was to be Delannoy's elysium. He resolved to enjoy it to its full extent. He therefore made his plans, which were extremely simple, and began to sham the early stages of locomotor ataxia. We do not know what he did with his knee-jerks, but he evidently did not reinforce them, and we suppose that his pupils had not yet become involved; but all the other early symptoms of tabes, especially of the sensory type, being easily simulated, he assumed his rôle, and made his début at the Salpêtrière, where he promptly victimized Charcot. After this eminent savant had made a diagnosis things were evidently easy for Delannoy in Paris. Charcot's diagnosis was a *passé-partout*. The doors of all the hospitals stood open to the malingerer. Who, in Paris, would dispute the diagnosis of the great neurologist?

From this period Delannoy's course was steadily onward and upward, until he almost attained sainthood. Some of his adventures, however, were harrowing and almost bring a tear—probably *did* bring Delannoy's tears. He was for a time in Callard's wards in the Hotel Dieu, but, liking change of scene, he went, in an evil hour for him, to the Necker Hospital, where Rigal awaited him with the inevitable hot iron. Here he was burnt in a red-hot fashion, and in the intervals was blistered in order to keep up the revulsive effects. The impostor endured this as long as he could and then fled. Later, under Ball he was treated with belladonna and morphin, much to his satisfaction; but apparently tiring even of morphin in a year he professed himself cured and left. Relapsing, he once more encountered Rigal with his hot irons, but soon sought more congenial quarters, and passed successively through the Beaujon, the Charité, the Lariboisière, and other hospitals. Some of these institutions he entered more than once. He was finally captured by Dujardin-Beau-

metz in the Cochin Hospital, and was hung up. The suspension-treatment was then all in vogue in Paris, and Delannoy, probably knowing that he could not escape it anywhere, submitted to this benevolent and optimistic therapist, who strung him up fifty-eight times in two months.

But these various therapeutic adventures need not detain us, although they occupied Delannoy for several years. Finally, either because he wearied of this burden of pathology or because he was convinced that tabes is practically an incurable disease, and will not yield to hot irons and suspension, he resolved to give up the game. It occurred to him that the easiest and most rational way to give it up was to go to Lourdes and be cured. He foresaw fame and even gain at the shrine; and then, too, it offered him a neat way out of one deception by helping him to slip gracefully into another, and so to return to the world with the posterior columns of his cord all right, and no questions asked. He resolved to abandon medicine and to seek the church.

Accordingly Delannoy went to Lourdes. He arrived there in a most pitiable condition. He was carried to the Virgin Mary's Grotto, kissed the ground, and remained a long time prostrate before the Holy Sacrament displayed at the altar. Suddenly, according to his own veracious statement, he had a feeling of a mysterious inner force, which caused him to stand, to walk, to drop his crutches, and, we suppose, to resume his reflexes. This transformation was of course the signal for the other pilgrims (poor dupes, probably mortally diseased) to sing hymns of praise. The beaming fathers of the Grotto were not slow to take the bait. They treasured up all the details and proofs of this modern "miracle," and prepared to confute the infidels. They supervised an appropriate spectacular display; and in the evening a torchlight-procession of pilgrims was seen "threading its way up the zig-zag paths of Massabielle, rejoicing for the miracle." Delannoy was of course in the front rank of this procession. The next day the impostor was examined medically in the presence of an archbishop and a bishop, and was declared *ex cathedra* to have been cured of locomotor ataxia. The miracle was duly recorded in the register of Notre Dame de Lourdes, and Delannoy, without undue delay, returned to Paris as an honored guest of the national pilgrimage.

It is needless to say that the physicians of the Paris hospitals were staggered by this case. They examined Delannoy again and again after his return,

and not one of them seems to have suspected the truth even then. A telegram was sent from Paris to Lourdes expressive of this medical perplexity. It said, "He walks like a country postman." Thus in homely phrase science bore testimony to the truth of the miracle.

In the following year (1890) the fathers of the Grotto appointed Delannoy overseer of a home for invalids awaiting to be miraculously cured. Such an institution might, we submit, be henceforth called a "Hôpital Delannoy." It would thus help to preserve a unique reputation, which soon spread over Europe, America, Asia, Africa, and Australia. From all these parts of the world the ex-tabetic was soon in receipt of rich presents, with prayers that he would intercede with the Virgin, with whom he was supposed to have extraordinary influence. The rogue was now at the pinnacle of his fortunes.

But Delannoy was evidently not made to endure either fortune or tabes. He wearied of one as he did of the other. In about a year he stole 400 francs of the good fathers' money. As there was nothing miraculous about the theft Delannoy decamped. He again sought Paris and gained admission at St. Anne's Asylum as a lunatic; was discharged, and admitted again on a doctor's certificate, and this time stole 1800 francs of the hospital-funds. This was the beginning of the end. Having devoted himself so successfully to medicine and theology he was now about to try his experience with the law. There was to be no humbugging the law, however. He was arrested by the police, and was pronounced by some shrewd police-surgeons to be a malingerer of extraordinary skill. He was tried, convicted, and sentenced to four years' imprisonment and ten years' police-surveillance.

Not the least notable feature of this case is the fact that Delannoy deceived Zola. The realistic novelist could not explain the "realism" of this supposed cure. It is to be predicted in conclusion that while Delannoy deceived both the physicians and the priests, there will yet be seen this difference: The former will acknowledge their error, but the latter will not abolish Lourdes.

EDITORIAL COMMENTS.

Medical Advertising in Austria.—The Vienna Medical Chamber has recently adopted regulations governing advertising by medical men. The commission of any of the following acts on the part of a physician will constitute an offence against professional dignity:

Causing or permitting, or refraining from preventing (when he has the power) the insertion of advertisements in newspapers, journals, indexes, guide-books, annuals, leaflets, circulars, or any other description of printed matter. This article, however, does not refer to medical publications, nor is it meant to hinder a medical man from publicly proclaiming his entry into practice, his return after a prolonged absence, or his change of domicile, provided the notification is not repeated more than three times. The same information may also be conveyed by means of a circular, but in both cases the notice must contain nothing additional beyond the name of the advertiser, his academic qualifications and legal medical designation, an indication of the specialty he professes, his address, and the hours he is at home for consultation. Publishing, or allowing to be published, letters of thanks and expressions of gratitude from patients who have been treated by him; recommending, either directly or indirectly, in pamphlets and popular publications, his own system and methods of treatment in preference to those of other practitioners; allowing commissions to midwives, waiters, commissionaires, porters, etc., in return for their services in procuring him patients; drawing public attention to himself by means of a charlatan's sign-board; endeavoring in an unbecoming manner, after the fashion of quacks, to attract notice to the medical establishment he either owns or directs.

In commenting upon these regulations and their adoption by the Medical Chamber of Vienna, the *Lancet* points out that far more latitude in the way of advertising is thus allowed to the medical profession in Austria than is the case with the English profession. It further expresses the opinion that the best way to safeguard professional dignity is by drawing up hard and fast regulations prohibiting personal announcement of every kind and description. With these views we are in hearty accord. When it shall become necessary for medical men to exploit themselves by advertisement, surely will medicine have degenerated into a business.

The Revival of the Index Medicus.—The following subscriptions to the *Index Medicus* received up to October 8th have not been included in any of the several lists already published in THE MEDICAL NEWS:

Detroit: H. O. Walker	\$25
Milwaukee: R. Newton Hawley (Milwaukee Medical Society)	25
Philadelphia: H. A. Hare	25
Edward Martin	25
Santa Barbara, Cal.: R. J. Hall	25

A total of two-hundred subscriptions will be required before December 1st to complete the guarantee-fund for the revival of the *Index*, and it would be a disgrace—not to speak of the actual loss—to the medical profession if the requisite number were not secured within the stipulated time. Every medical society with a membership of twenty-five and more, and every reputable medical college in the country, owes it to the profession to subscribe annually for one copy.

We are informed by Dr. J. B. Roberts that the Committee, of which he is Secretary, has received the following additional subscriptions:

Dr. L. McLane Tiffany, Baltimore	\$25
American Medical Missionary College, Battle Creek, Mich.	25
Dr. George R. Fowler, Brooklyn	25
Library Medical Department University of Buffalo	25
Dr. M. D. Mann, Buffalo	25
Dr. J. H. Etheridge, Chicago	25
Dr. E. Fletcher Ingals, Chicago	25
Dr. Joseph Ransohoff, Cincinnati	25
Dr. J. T. Eskridge, Denver	25
Dr. W. M. Polk, New York	25
Dr. Thomas G. Ashton, Philadelphia	25
Dr. Ernest Laplace, Philadelphia	25
Lea Bros. & Co., Philadelphia	25
Library of the College of Physicians of Philadelphia	25
Mr. W. B. Saunders, Philadelphia	25
Dr. John D. Roe, Rochester	25
Dr. E. C. Burnett, St. Louis	25
Dr. H. H. Mudd, St. Louis	25
Dr. E. L. Trudeau, Saranac Lake	25

Climate and Health.—On p. 134 of THE NEWS of February 2, 1895, we called attention to the proposition of the Weather-bureau of the United States Department of Agriculture to undertake the collection and periodic publication of data bearing upon the relation of disease and death to meteorologic phenomena—a matter of great interest and much importance. This plan has reached fruition, in so far as the first number of the new journal, designated *Climate and Health*, and edited under the direction of the chief of the Weather-bureau, Prof. F. Willis S. Moore, by Dr. W. F. R. Phillips, has been issued. This contains a summary of statistics covering the four calendar weeks that began June 30 and ended July 27, 1895. The data presented consist of climatic charts and tables obtained from the records of the meteorologic observatories of the Weather-bureau; statistics of mortality and morbidity furnished by special reports of public-health officials and of physicians made directly to the Weather-bureau; and some mortality-statistics taken from reports made to the Marine-hospital Service. We welcome this new addition to scientific literature which reflects credit upon the government, the Department of Agriculture, and the Weather-bureau.

The Need of Animal Experimentation.—We commend to the consideration of our antivivisection-friends and to others the following concluding remarks of the elaborate and comprehensive article on "The Treatment of Diphtheria with the Antitoxin," by Dr. W. H. Welch, the distinguished Professor of Pathology in Johns Hopkins University, published in the *Bul. of Johns Hopkins Hospital*, vol. vi, Nos. 52, 53, p. 97, and from which we quoted some statistics in THE NEWS of Oct. 5th:

"The discovery of the healing serum is entirely the result of laboratory-work. It is an outcome of the studies of immunity. In no sense was the discovery an accidental one. Every step leading to it can be traced, and every step was taken with a definite purpose and to solve a definite problem.

"These studies and the resulting discoveries mark an epoch in the history of medicine. It should be forcibly brought home to those whose philozoic sentiments outweigh sentiments of true philanthropy that these discoveries, which have led to the saving of untold thousands of human lives, have been gained by the sacrifice of the lives of thousands of animals, and by no possibility could have been made without experimentation upon animals."

Cropping Dogs' Ears.—There is now before the American Kennel Club a proposed amendment to its bench-show rules to prohibit the cropping of dogs' ears, which, if adopted, will prevent all dogs cropped after a fixed date from being shown at any of our bench-shows. Cropping has now been declared by the English courts to be an illegal cruelty, and the Irish Terrier Kennel Club has the great merit of having inaugurated a systematic reform by excluding cropped dogs from its bench-shows. It is certainly desirable on all grounds—for the sake of kindness, for the health of the animal, and for esthetic reasons—that this cruel and disgusting practice of mutilating animals should be stopped.

SELECTIONS.

A LITTLE CONTROVERSY.

MR. GEORGE M. GOULD seems to be the editor of THE MEDICAL NEWS. The other day in his paper he made an exaggerated and somewhat stupid assertion in defence of the manly art of vivisection,¹ reflecting on the usefulness and sincerity of a universally respected association whose object is the suppression of cruelty to animals. This assertion was politely and ably corrected by Mrs. Caroline Earle White in a letter to the aforementioned editor. The letter was not long, but was concise and to the point. It ended with these words:

"Begging you to do me the favor to publish this letter, I remain yours truly,

"CAROLINE EARLE WHITE,
"Cor. Sec. Am. Antivivisection Society."

The chivalrous recipient, however, not handicapped by any ideas of professional etiquette, instead of publishing the letter, sent the following note:

"DEAR MRS. WHITE: I regret that owing to the crowded condition of our columns, it will be impossible for me to insert the letter which you have so kindly sent me, date of May 13th.

"Very sincerely yours,
"GEORGE M. GOULD."

Now, Mr. Gould, we all know that the columns of THE MEDICAL NEWS are not so overcrowded with interesting matter as to justify you in violating the ordinary laws of courtesy, and we would suggest, in a brotherly way, that even if not hampered by any sense of justice, both you and your publication might derive a lasting benefit from a closer observance of the established rules of your profession.

Your bravery in times of war might stir the nation, but the courage you have displayed upon this occasion is not of the kind to which monuments are erected.

It is possible that *Life* may be unjust in expecting a very tender regard for human rights from one who defends the cutting up of living animals for the entertainment of medical students.—*Life*, August 13, 1895.

The following communication is much too long for the space we should wish to give, but as the writer feels

himself injured by our previous comments we prefer to print it entire.

The author signs his name at our own request.

Faddomania and Courtesy.

To the Editor of Life,

SIR: In *Life* (August 13th) you lampoon a physician for declining as editor to print in his journal a letter from a correspondent, and you read him an illustrated lesson in etiquette. By all rules of humor and literary exegesis the vignette you use, a hog reading books of etiquette, can only be construed as setting forth your own office and mental condition. It is a praiseworthy and admirably frank personal confession. But that you do not choose good books is evident from the fact that every line of your article violates the rules of courtesy and good breeding practised by gentlemen. Your books should teach you:

1. Not to vilify a brother-editor for a courteous rejection of a manuscript written by a (to you) unknown correspondent. To mind one's own business is simple decency.
2. Not to drag a physician's name into public print (lay journals) without his consent.
3. Not to name an editor personally, instead of his journal, when discussing editorial action.
4. Not to indulge in personalities instead of discussing principles.

Please now ask yourself:

1. Is it good editorial judgment, especially as editor of a humorous journal, to be a faddomaniac? Does not zealotry destroy the sense of humor? Please let us yet read our *Fliegende Blätter* and *Life* for many years to come.

2. Is intense conviction any proof of sound judgment? Have you taken the least precaution to know the truth, either as to the question of vivisection or as to that of the rejection of a manuscript by a distant brother-editor? All good men will join with you in stopping the abuses of vivisection, which, to a limited degree, all physicians will recognize to have occurred in the past, but let us have no fanaticism! Remember that the great vivisectionist, Ludwig, was the greatest promoter of kindness to animals in all Europe.

3. Should not the vain editorial portrait you reproduce have much longer ears, without, of course, losing the characteristic face given? *Life's* article is as non-intellectual as it is boorish. *E.g.*: A little exercise of judgment would have brought you proof that both the Antivivisection Society and the malicious creature who sputters her pitiable nonsense in every possible journal of the land, and who has so egregiously duped you, are the butts of ridicule with those of any degree of understanding. You also charge a gentleman with "defending the cutting up of living animals for the entertainment of medical students." This person, however, never did defend the practise of vivisection for didactic purposes, and has always and publicly argued against it. Injustice and calumny are bad, even in a good cause—a fact you two have yet to learn.

Finally, let me ask you:

1. If your child falls ill with diphtheria will you call a vivisectionist-physician, and will you permit him to use the antitoxin-treatment to save its life? Even your

¹ The reference is to an editorial article in THE NEWS on "The Capricious Mutilation of Animals," April 27, 1895, devoted entirely against a fashionable form of cruelty to animals, with not a word in defence of or about vivisection.—ED. THE NEWS.

poorly informed self must know that this boon to humanity could only reach you through vivisection.

2. Are you a meat-eater? If so, you live by the death of animals. You are a butcher as well as a vivisectionist. Is the nourishment of your individual body of more good to humanity than the progress of medical science? The animals you have butchered and vivisected for this purpose were not, as almost always in the laboratory, painlessly killed, but were either brutally pounded to death, or (lobsters, etc.) often ended their lives after long hours of atrocious torment for your palate's sake.

3. Do you not know that every line you write about the vivisection-controversy is loaded with error and falsehood—the often exposed charge of cruelty and pain? The fact is that pain would destroy the value of nine-tenths of all vivisection-experiments, even if the sympathy of the experimenter were not active to prevent it.

4. Do you not know that such rabid and ill-informed faddists as you and Mrs. White are the greatest provokers of cruelty to animals? You disgust people with a movement they would otherwise aid, and you make everyone with a grain of sense or indignation wish to kick all dogs and horses for having such "defenders" and "friends" as your illogical and foolish selves. Luckily we have pity despite you, and are not haters of all womankind because of one virago.

Sincerely yours, GEORGE M. GOULD.

PHILADELPHIA, September, 1895.

It is, perhaps, only fair to give our readers both sides of a question, and we honestly regret that our fervid correspondent should have displayed so much more heat than logic in the space at his disposal. We also regret his questionable allusions to a universally respected lady whose disinterested labors in a splendid cause have won an enviable fame.—*Life*, October 15, 1895.

A COMBINATION OF SCIENCE AND SUPERSTITION.

THERE is now a Chinaman practising in Los Angeles, Cal., who is well versed in medicine, having been a student of the English Mission Medical School. The man first studied a Chinese translation of *Gray* by Dr. Dudley and the translations of *Bartholow's Practice*, and other medical works by Dr. J. G. Kerr. He is a very bright fellow and an observing student. Being of a business turn of mind and learning of the insatiable appetite for occultism and for the marvellous that existed in the United States, he studied English systematically and emigrated to America to fill a long-felt want. Were he to practise Western medicine in an open manner he would find a great practice among his own countrymen who invariably prefer intelligent medicine; but Americans pay far better, so he assumes to practise Oriental medicine and carefully keeps in the unseen background both his knowledge of medicine and of English. Were it known that he practises intelligently he would soon lose all of his American *clientèle*. This man certainly practises under many advantages, as he brings to his aid all that scientific knowledge or skill can give, supplemented by all the psychological influence that the mind

and imagination through suggestion can exercise over the individual. He has here a great advantage over his Chinese brother-practitioner of Chinese medicine who is completely at sea as to scientific medicine, or over his American fellow-practitioner who can neither impress nor mystify the imagination of his patient. Like his Parisian *confrère* with the astrolabe, magic mirror, and of occult and mystic surroundings, he can perform cures or miracles which are not given to be performed by either ignorant pretenders or by educated men. To admit that this combination is right and proper or necessary, as some might conclude, is to admit that our masses have not risen above the level of the general human understanding of the masses of the sixteenth century, when magic of all sorts formed the basis of medical practice, and when demoniacal possessions were common beliefs both in the practice of medicine and in the exercise of the theology of the times.—*The National Popular Review*.

A DEATH-PREVENTING INVENTION.

AN ingenious and investigating genius, named Auguste Theiss, has invented a machine through which life may be prolonged indefinitely—at least this is the modest claim of the inventor, as original in his conceptions as the San Diego physician, who, in the *American Gynecological and Obstetrical Journal* for April, 1895, claims to have "discovered a *primipara*, eighty years of age; discovered accidentally while endeavoring to pass a catheter," in a case of misplaced urethra—and which he is attempting to bring to governmental notice. The authorities of New York State have been besieged by this philanthropist, but it would seem that so far he has been unable to secure an investigation of his machine, or even an interview with the Governor, and he has solemnly notified Governor Morton that he will hold him accountable for all the deaths occurring in New York State for the coming year. The machine has not been seen nor its details made public, but the inventor has allowed it to be known that the principle upon which it operates depends upon the retention in the body of a proper degree of animal heat.—*The National Popular Review*.

SPECIAL ARTICLE.

LUDWIG AND THIERSCH.

AT the beginning of the last semester, within one week, the medical faculty of the University of Leipzig was deprived by death of two of its oldest and most eminent members.

The names of Ludwig and Thiersch stand out prominently in the short list of illustrious men, who, during the last fifty years, have earned for themselves the honor of having inaugurated a new era in scientific medicine. Though each worked in a special field, both have opened up entirely new channels of investigation in which, through long lives of unwearied activity, they have been able not only to make fundamental observations and discoveries themselves, but also by virtue of their personalities to establish schools and to stimulate younger minds to undertake researches and to attempt

the solution of problems first rendered accessible by their pioneer work.

While everyone is compelled to admire the many-sided talent of the surgeon and pathologist, the intellectual superiority of the great physiologist, regarded at least from a scientific standpoint, will generally be admitted. Ludwig was one of those phenomenal personages who at rare intervals in the history of science stand out head and shoulders above their contemporaries, possessing a clearness and wideness of vision that to ordinary mortals seems incomprehensible—almost abnormal. Though the search-light of his energies was turned in the most varied directions, the results attained by him in any one would have sufficed by themselves to rank him as a genius in the scientific world. The discoveries he made were by no means accidental; the new facts that he brought to light were always the result of some well-planned research in which the end was often seen even before the work began. There is scarcely any department in the broad field of physiology in which our views have not been extended, improved, or entirely reshaped by Ludwig and his pupils, and several doctrines that owe their origin to his early work have remained unchanged and are practically the same as when formulated by him thirty years ago.

Carl Friedrich Wilhelm Ludwig was born at Witzhausen, December 29, 1816. After studying in Marburg and Erlangen, in 1839 he took his doctor's degree at the former university, where two years later he was appointed second prosector in the anatomic institute. In 1842 he received the *venia legendi* for physiology, his thesis being entitled "Contributions to the Doctrine of the Mechanism of the Secretion of the Urine" (*Beiträge zur Lehre vom Mechanismus der Harnsecretion*). In this monograph he put forward a physical theory of excretion, based upon anatomic investigation, a subject that occupied his attention later on at intervals for many years afterward. In his earlier studies he had familiarized himself with the physical conditions regulating the endosmosis of fluids through animal tissues, and this knowledge he now utilized in order to elucidate the hitherto puzzling phenomena connected with the activity of the kidneys. In 1849 he accepted the Chair of Anatomy and Physiology at the University of Zurich, the years spent there proving particularly fruitful. One can heartily sympathize with Gaule, who, when writing of the period from 1849 to 1855, during which the secretory function of the nerves was discovered and the foundations for the doctrines of the interchange of gases during respiration, and of the movements of the lymph were laid, openly declares his envy of Ludwig's companions at that time, whenever they spoke of his energy and single-heartedness in discussing his experiments, theories, and plans.

In 1855 he was appointed Professor of Physiology and Zoology at the Medical Military Academy (the *Josephinum*) in Vienna. Ten years later he succeeded Ernst Heinrich Weber as Professor of Physiology at the University of Leipzig, where he continued to work and to teach till within two months of his death. His great friend, Helmholtz, preceded him only by a few months. Last year Ludwig, writing to Gaule in Zurich, had spoken of him as follows: "Helmholtz recovers only slowly from his attack. I hope at all events that he

may not suffer; the sudden death which befell Hoffman is a good fortune granted, alas, to few."¹

The good fortune of which he spoke was not destined to fall to Ludwig's share; the severe attack of influenza from which he suffered weakened and rendered him prostrate for several weeks before his death.

No biography of Ludwig, however brief, could be satisfactory unless some mention were made, not only of his personal work, but also of that of certain of his friends and contemporaries and of their immediate followers.

Quite early in his youth, Ludwig had become firmly established in most of the fundamental principles that must be recognized as underlying all his subsequent work. For a century before his time the theory of the so-called "vital force" had been brought forward to explain those phenomena connected with the animal body, to deal with which chemistry and physics had seemed to be powerless. *Vitalismus* was an officially recognized dogma, almost too sacred to be attacked with impunity. Ludwig and his three friends—Helmholtz, Ernst Brücke, and E. du Bois Reymond—were firmly convinced that the processes taking place in living organisms conformed like all others to definite physical and chemic laws, and were not to be attributed to some mystic and indefinite vital force into the nature and workings of which it was sacrilegious to inquire. They not only had the courage to make public their opinions, but they also set to work to prove the truth of their beliefs. The early investigations of Ludwig concerning the mechanics of the urinary secretion, to which reference has been already made, represent one of the first and most important blows to the doctrines of the "vitalists." Looking back upon the achievements of these four scientists, each working by his own method and at his particular research, but all engaged with allied problems, one cannot but admire the genius, daring, and indefatigable industry of this circle of friends. Blow after blow was struck at the vitalistic theory; rampart after rampart fell, until finally the old dogmatic view appeared to be entirely demolished. Students flocked to join the successful contestants, each bringing his own contribution to the work, until one of Ludwig's students, speaking of the triumph, was able to write, "So complete has been the victory and so thoroughly has the new doctrine entered into the flesh and blood of the younger generation that nowadays when here and there a vitalistic idea is advanced its proposal is looked upon almost as something new."

These doctrines are universally accepted by the physiologists of to-day, and while it is not surprising that they should not, in so short a time, have had their full effect in other than medical circles, it must be admitted that the influence exerted by them upon the development of modern thought has already been profound. Nevertheless, it is still true that the struggle for emancipation from the obstructing *Vitalismus*, though practically over as far as most physiologic processes are concerned, is by no means ended in certain special domains, a fact which neuro-physiologists and psychologists realize only too well.

¹ "Helmholtz erholt sich von dem Anfall nur langsam. Möchte er nur nicht leiden; freilich so viel Glück wie von Hoffmann durch den raschen Tod verfuhr ist nur wenigen beschieden."

Of those generally recognized as great men, some have gained their greatest renown as investigators; others have been most successful as teachers; not all have possessed an admirable personality. Ludwig was a great investigator, perhaps greater as a teacher; while as a man he was a wonder and a surprise to all who came in contact with him. The researches carried to a successful termination by himself or under his direction are far too numerous to permit of even a short reference to each one here. The subjects they deal with are most diverse, and include many of the most important contributions to general and special physiology, physiologic chemistry, and microscopic anatomy of the past fifty years. The literature is for the most part accessible, a large proportion of the articles having been published in the *Zeitschrift für rationelle Medizin, Wiener Sitzungsberichte, and Arbeiten aus dem physiologischen Institut zu Leipzig*.

If a man of such wide interests can be said to have had a hobby, it was the study of the circulation. In it he found manifold opportunities for his exact methods of measurement, and particularly for the transference of the laws of hydrodynamics. It was his delight to take a firm hold of things, to grasp something tangible, and where for others rough estimations might suffice, for him weights, linear measures, measures of capacity, curves, and written records were an absolute necessity.

His epoch-making invention of the kymograph in 1847, to which the sphygmograph owes its origin, really makes him the father of the so-called graphic methods of investigation, by means of which not only the physiologist and experimental pathologist, but also the clinician, is enabled to follow and accurately record many of the processes that go on in the living organism. The blood-pressure and the velocity of the blood-current were measured, and the effects of internal and external influences upon the blood-pressure and the pulse-frequency could now for the first time be satisfactorily studied. In 1864, in conjunction with Thiry, he published his important monograph, "Concerning the Influence of the Cervical Spinal Cord upon the Circulation," in which it was proved that the pressure in the arterial system could be regulated through the varying distention of the vessels of the portal circulation.

In 1873 Dittmar, under Ludwig's direction, determined approximately the site of the vasomotor center in the medulla, and at the latter's suggestion Mosso, in the following year, registered the independent movements of the peripheral bloodvessels in the kidney. As a result of this research were developed later the beautiful plethysmographic methods, by means of which Mosso and others have been able to make important contributions, many of which have an interesting psychologic bearing. As early as 1866 Ludwig, with E. Cyon, had demonstrated a sensory nerve—the depressor nerve—connecting the heart with the medulla, which, when stimulated, could perceptibly lower the tonus of the vasomotor centers, and through which "the essential motor of the circulation—the heart—is able to regulate the resistance which it has itself to overcome." This monograph excited much comment and admiration, and was crowned by the Paris Academy.

In 1871 Bowditch proved, so far at least as the frog's heart is concerned, that any stimulus, no matter of what strength, so long as it is as high as the minimal, would

call forth a maximal contraction. Luciani, in 1872, introduced a method by which the "over-living" organ artificially nourished could be studied for a long time after being separated from the rest of the body. With the important results, especially with regard to the relations of the tissues to the blood and lymph, which this method has yielded when applied to other organs, muscle, kidney, liver, intestine, etc., everyone is now familiar. The fruitful researches of von Frey and Krehl upon the pulse are so well known that they need hardly be mentioned here. The investigations made by Ludwig and his students concerning the gases of the blood and the relations of the individual tissues to the general gaseous interchange are full of interest. Quite recently (1894) one of his students, Franz Tanzl, published the results of a research which, along with other things, proved that the ligation of the intestinal arteries can diminish the respiratory gas-interchange by over 30 per cent.

In enumerating the points bearing on the circulation ordinarily demonstrated by experiment in our best schools in a course of practical physiology, one cannot help being struck with the fact that almost everyone is included in the researches to which we have referred. A perusal of the work of Tigerstedt, a former pupil of Ludwig, on the circulation will give an excellent idea of the scope of the work done by the master and his followers in this field.

Almost as astonishing as his brilliant discoveries regarding the circulation and respiration were the results attained by him when he directed his attention to the subject of glandular secretion. His publication in 1851 concerning the relation of the nerves to the secretion of the saliva furnished an entirely new standpoint from which glandular activities could be studied. With the aid of his students he established the fact that the salivary glands can actively secrete quite independently of the height of the blood-pressure. Of his studies and those of his students upon the gastric and intestinal digestion and the secretion of the bile, it will suffice here to say that a great part of what stands in the modern text-books of physiology concerning these points has emanated from the Physiological Laboratory of Leipzig. In addition to his own early work upon the excretion of the urine he directed several important investigations upon this subject in his laboratory. Among these may be mentioned the researches of Ustimowitsch, and later those of Slosse, upon the effect of ligation of the mesenteric arteries on urinary secretion, and that of Grigus, in 1893, which proved that the heat-production in the kidneys was directly proportionate to the amount of urine excreted.

The Ludwig school has also made contributions of the highest order to the physiology of muscle and nerve. Ludwig himself, however, as it would appear, was especially interested in the effects of muscular movements upon the circulation and respiration. Lauder Brunton, in an address delivered in London, in September, 1894, which dealt more especially with this subject, referred in a most touching manner to the work and character of his former teacher. Ludwig further directed his acute powers of observation and his exact methods to the subject of the various reflexes, and the immediate excitability of the gray matter of the spinal cord by mechanical irritants was proved by his pupils. The sensory

nerves, both general and special, have been submitted to frequent studies in his laboratory. Of these the recent investigations of von Frey concerning the sensations of touch, pain, and temperature, an epitome of which will be subsequently published in THE MEDICAL NEWS, are especially worthy of mention.

In the allied field of physiologic chemistry—a favorite “hunting-ground” of the master—we find between the years of 1856 and 1894 a whole host of publications, many of which contain the results of researches of fundamental significance. The work of the Ludwig school, both in its exactness of method and in the practicability of its results, would even by itself be sufficient, notwithstanding the occasional criticism of the so-called “pure chemist,” to refute the charge that “all physiologic chemistry is mere dilettantism.” In 1856 the occurrence of inosite and of uric acid in the animal body was determined by one of Ludwig’s pupils. In 1871, by means of newly devised methods, the lime and phosphoric acid in the blood were quantitatively determined. In 1874 he directed a research concerning the constitution of the fats which enter into the blood from the alimentary canal, and in 1876 himself investigated the flow of fats through the thoracic duct while the subject was upon a fatty diet. The absorption of acid fats by ways other than the thoracic duct formed the subject of a special research, the results of which were published in 1891, while in 1894 the splitting up of fatty acids, independently of ferments, was experimented with.

In looking over the list of publications from Ludwig’s laboratory it will be noticed that the chemistry of the liver was not forgotten. Thus, in 1887, we find an article on “The Origin of Lactic Acid from the Over-living Liver,” and in 1890 one entitled “The Impoverishment in Glycogen of the Anemic Liver.” Among so very many important publications—for no article published with his sanction can be called unimportant—it seems almost invidious to single out any particular one. But the work of Scheremetjewski in 1868, and that of Harley in 1893, on the decomposition of easily oxidizable substances in the blood must be mentioned. The results of Mall’s work upon the chemistry of the connective tissues, with particular reference to the reticulum, have already passed into the text-books. Comparatively recently Siegfried has separated an important constituent from muscle, and his *Fleischsäure* promises to be of more than ordinary interest to physiologic chemists and physiologists. The fate of the products of proteid digestion, during and after absorption, was a task assigned to Schmidt-Mühlbein and to Salvioli. Fano in 1881 studied the remarkable effects of peptone upon the blood and lymph, and some of the best work of the talented but ill-fated young English physiologist, Wooldridge, was done in Ludwig’s laboratory and under his direction.

But even in the briefest summary it would be an injustice to omit altogether his researches in yet another branch—the department of anatomy—a subject for the problems of which Ludwig always retained the highest reverence. As a physiologist he never forgot that his branch was an offshoot of anatomy, and he recognized the fact that without the anatomic basis and the possibility of applying to it physics and chemistry there could be no physiology. On undertaking his work at Leipzig and in organizing a physiologic institute he expressly stipulated for the establishment of three distinct depart-

ments—one for minute anatomy, a second for physics, and a third for chemistry. In this way arose the histologic department of the Physiologic Institute of Leipzig, with which Schweigger-Seidel, Schwalbe, Flechsig, and Gaule were connected. It was here, under the influence of Ludwig, that these men received the precise and methodic training which, together with the spirit inspired by their master, led in great part to the fruitful results that have characterized their labors.

Even in the later years of his life Ludwig kept fully abreast with the advanced researches in the histology of the various organs of the body. Only a short time before his death he was at work upon a model in which were represented the latest investigations concerning the structure of the cerebellum as brought out by the silver-method. His library was rich in anatomic monographs, and those who worked with him were often astonished at his familiarity not only with the titles and dates of articles on histologic subjects, but also with the minute details contained in them. He regarded each of the various organs as a delicate mechanism, the structure of which must be thoroughly known before a perfect understanding of its functions could be reached. It was his special delight to start with a recent microscopic finding and ferret out for it a physiologic explanation. Quite early in his career he made valuable contributions to our knowledge of the nervous structures contained in the septum of the frog’s heart, and in his laboratory at Zürich the work of Peyer on the brachial plexus and that of Rahn on the secretory nerves were noteworthy. In Vienna, in conjunction with Tomsa, Leber, and McGillavry, he began to investigate the finer distribution of the bloodvessels and lymphatics, and ever afterward during his lifetime he had some one or other of his students busily engaged in this field. It was his aim to find if possible in every organ what he was accustomed to speak of as the “vascular unit,” and to compare this in glandular structures with the “secretory unit.” The structure of the kidney, the liver, the salivary glands, the intestine, the pancreas, the skin, and of voluntary and involuntary muscles, as well as of different parts of the central nervous system, were thoroughly explored. The bloodvessels and lymphatics of the muscles, of the skin, and of the larynx were exhaustively worked out. Similar studies for the eye had been made by Leber in 1865, and for the ear by Prussak in 1868, and again by Eichler in 1893. Under Ludwig’s direction Mall completed his studies on the blood-supply and the general structure of the intestine of the dog. Giannuzzi, von Fleischl, von Mihalkovics, von Asp, Stirling, Gaskell, Spiess, Hesse, Altmann, Spalteholz, Fischer, and Fick are among those who worked at minute anatomy at Leipzig at his suggestion. His anatomic colleagues at various times, Professors His, Meyer, and Braune, were always glad to acknowledge the profit as well as the pleasure of intercourse with him.

Ludwig possessed in a high degree the rare power of successfully utilizing men and materials. He seems to have always known how to employ to the best advantage the knowledge possessed by the men who came to work with him. It is sometimes the case in laboratory-experience that a subject with which the director is imperfectly acquainted is best kept in the background. Not so with Ludwig. He hailed with pleasure the advent of a man trained in special methods, physical or

chemic, with which he himself had had little or no experience. By these means he often gained an opportunity of solving a problem that had long puzzled him.

But it was in his capacity as a teacher that his powers showed themselves at their best. In his ability to attract and to retain around him the picked men, and to call forth from brain and hand the very best work of which they were capable, Ludwig stood second to none. Ever painstaking in the teaching of his ordinary students, with whom he was always a favorite, he reserved his main energies for more advanced students, and found his chief delight in training the men who, having finished their preliminary studies, or already holding teaching-positions elsewhere, came to him to be taught how to investigate, how to undertake and to carry out research-work. Among these, who numbered in all more than 300, are to be found the names of many of the leading physiologists of Russia, Germany, England, America, Austria, Italy, Sweden, Denmark, Switzerland—in short, of the civilized countries of the world. It is stated that up to within a few years ago all the professors of physiology in Russia, and many of the clinicians of that country, had been trained in his institute.

Ludwig's knowledge was so broad, his interests so many-sided, and his personality so charming that naturalists of the most varied nationalities and specialties were anxious to have him as a guide, and proud to proclaim him as their master. His laboratory was the home of an international circle, and even in troublous times his magic influence was sufficient to maintain among all the friendliest relations.

The willingness of Ludwig to sacrifice himself for his pupils and to hide his own personality behind that of his pupil affords an example of abnegation seldom, if ever, paralleled in the history of science. He is a great man who can make clever men willing to direct all their energies to the working out of his ideas. He is a greater man who gives them all the credit of the results obtained. When we think of Ludwig, not only when his reputation was made, but even when he was a comparatively unknown man, leaving his own particular work to assist a pupil in solving a problem, of which the idea was his own, sometimes even writing the article for publication without sharing any part in the title, we encounter a generosity, an absolute unselfishness which, in these days and judged by what we call high standards, seems almost more than human. It has been suggested by Gaule that if one sought to find fault with him it would be that sometimes he devoted too much of his own strength to the service of others, and thus brought credit and renown to quarters where it was not fully deserved.

In his intercourse with his students he knew how to gain not only their respect, but, what is often far more difficult, their love. A well-known American anatomist, from whom much of the information contained in this sketch was derived, spoke more especially of the generous sympathy which he showed toward strangers, whether his own countrymen or foreigners, who came to work in his laboratory. Even the most timid student soon felt at ease in his presence, and it was characteristic of him that he welcomed in his working-room and was willing to devote his time to a newly fledged graduate, provided only that he was an earnest worker and

was willing to learn. It was Ludwig's custom to let fall ideas so gradually and so casually, if one may say so, in the course of conversation that it often became difficult for the student when he had grown with them to recognize them as those of his master rather than as having been evolved by himself.

The same extreme delicacy of sensibility, of which his sympathetic manner was an outcome, also rendered him extraordinarily quick in reading the characters and aims of others. With him, the words of Goethe, *Vor den Wissenden sich stellen, sicher ist's in allen Fällen*, had a peculiar aptness. A student could not be long with him without exposing to his master's view his real qualifications and his ideals. He was an enemy to any secrecy connected with a research. It was not Ludwig's custom to take a number of new pupils at one time; in fact, he preferred to have only one beginning investigator in order that he might be with him and launch him safely upon the sea of independent research.

Professor His, who, through the deaths of Ludwig and Thiersch, is left the senior member of the medical faculty, in his eloquent panegyric said of Ludwig: "He gave to his students the highest gift vouchsafed to a teacher to impart, the power of investigating by themselves." His acquaintance with the development of modern physiologic thought, his own bitter experiences in the long struggle against dogmatism for freedom of thought and speech, his keen appreciation of the limits of knowledge, his recognition of what for technical reasons for the moment must be unknowable, all these were among the factors, which, together with his far-reaching knowledge of men and things, rendered him eminently fit to be the guide and instructor of the young naturalist.

The courage and enthusiasm with which Ludwig, even at an advanced age, attacked the most difficult problem provoked the admiration of all who knew him, and with this hope, this belief of being really able to do something worth while, he never failed to imbue his co-workers.

One of them, in a recent eulogy, tells an interesting anecdote in this connection, which is quite worthy of repetition here. A well-known investigator, who had himself grown old, once asked him: "Have you then actually the hope that physiology will eventually attain the end at which it is aiming?" and on receiving to his surprise an answer in the affirmative, immediately said: "Ah! you must be one of Ludwig's men." ("Freilich Sie kommen von Ludwig.")

Ludwig during his lifetime had seen medical ideas completely revolutionized, and, in fact, had himself played no small part in this revolution. He had seen the brilliant discoveries in electricity which have been evolved in the past fifty years. "Why then," he asked himself, "should not the next half-century achieve in the explanation of the cell as much as the last has done in the elucidation of the organs?" And so he went on day by day in his laboratory, ever hopeful himself, cheering the discouraged, repressing gently the over-elation of the too zealous, above all setting to those around him the best of examples.

It is to be hoped that ere long a competent biographer will be found among those who knew Ludwig best to give to the world a full account of this brilliant and useful life. It is difficult to imagine a subject which

could be made to give more entertaining or inspiring reading. Kronecker, in his eulogy, especially dwells upon the fact that pathology and internal medicine always found in Ludwig a very warm friend and supporter. He looked upon every case of disease as a physiologic experiment, which was all the more interesting in that, as a rule, it could not be produced artificially, and, *vice versa*, he regarded every physiologic experiment as an artificially produced disease, which since, as regards cause and effect, it can be better understood than the natural disease, must be for the pathologist of the highest significance. He understood that the aims of pathology are closely allied to those of physiology, and that while the former would restore the diseased organ to a healthy condition, the latter seeks to perfect and multiply the functions of the sound organ. Thus he regarded pathology as inseparably linked to physiologic experiment, and physiology in turn to clinical observation.

While devoting his life in the main to physiology and its problems, he was in the widest sense a man of liberal culture, and rejoiced that physiology had been able to make no mean contributions to music, painting, philology, and, not least of all, to psychology. In Leipzig, where he spent the last thirty years of his life, he was widely known and loved outside of scientific circles, and on the fiftieth anniversary of his doctorate he was granted "the freedom of the city" (*Ehrenbürgerrecht*).

Two friends with whom Ludwig lived in the most intimate relations were the painter Knaus and the writer Gustav Freytag. The latter, speaking in 1887, said: "If I have learned to think highly of German character, to despise dissimulation, to prize a love for and a confidence in humanity, I have been much helped in it by my two trusty friends, Ludwig and Wachsmuth;¹ for widely separated as are their occupations, both practise in them the same code. The great scientist, who for the success of his students makes his knowledge and his powers serviceable, with a self-sacrifice unexampled even among us, and the unselfish leader of great enterprises, the man whom many make their confidant and counsellor, the pride and favorite of his fellow-citizens, both men live in the same high-minded devotion to the welfare of others. They have often given courage to the heart of their friend, and through their lives have often corrected his judgment of others. The same holds true for the wives of these two men. Though neither Frau Ludwig nor Franziska Wachsmuth have ever been directly portrayed in any of my works, yet to the ideal type of the affectionate and brave German wife, who so often is pictured in my stories, both have without knowing it richly contributed."

It would seem as though destiny could not long keep apart these two friends, for only a few days after the death of Ludwig that of the great writer was announced.

Karl Thiersch was born in Munich in 1822. He came of a celebrated literary family, his father being Fried. Wilhelm Thiersch, who is so well-known in connection with the study of philology in Bavaria. Young Thiersch studied in Munich, Vienna, Berlin, and Paris, taking his doctor's degree in 1846 at the age of twenty-four. In 1850 he became assistant to the distinguished army-surgeon Stromeyer, and, having at his suggestion

directed his attention to the study of pathologic anatomy, in 1854 he was appointed to the Professorship of Pathology in Erlangen. Thirteen years later he was elected to the Chair of Pathology at Leipzig. In 1870 he took an active part in connection with the Franco-Prussian war as consulting *Generalarzt* of the 12th Army Corps.

If Thiersch as a scientist was not so creative as Ludwig, he was not lacking in independence of thought, and the extent of his mental grasp is well shown by the diversity of his investigations. As has been the custom among surgeons in England and also to a certain extent on the continent, Thiersch, like Billroth and Langenbeck, spent a long period in pathologic studies before giving himself up entirely to surgery. Of his earlier works, that on pyemia, the result of investigations made while prosector at the city hospital in Munich, is one of the most important and sheds new light upon the nature of septic processes. His best known pathologic research, and that which will probably be longest remembered, dealt with the microscopic structure of carcinoma. He made a most painstaking study of epithelioma, and demonstrated its constant epithelial origin. He opposed the doctrine of Virchow that a carcinoma could arise from connective tissue, and proved synchronously with Waldeyer, then working in Breslau, that a genuine primary carcinoma never developed except in situations in which epithelial cells are normally present.

His three greatest contributions to surgery proper were: (1) His investigations concerning the healing of wounds; (2) the operation of skin-grafting; and (3) the introduction of aseptic surgery into Germany. He devised numerous new operations and improved many of the older ones, particularly in the domain of abdominal surgery. The use of the solution containing salicylic acid as an irrigating fluid first suggested by him became widely known and was formerly much used in America. To Thiersch is also due the credit of being one of the first to recognize the advantage of the pavilion-hospital which had developed during the Civil War in the United States. It was mainly due to his influence that the large hospital in Leipzig was remodelled after this plan, and Thiersch, in talking to his students, was always wont to emphasize and to beg them never to forget that fresh air and sunshine were necessary adjuvants in the successful treatment of surgical cases. With his surgical colleagues he was always a favorite. He was chosen President of the *Deutsche Gesellschaft für Chirurgie*, and was recently elected *Ehrenmitglied*, an honor which has been bestowed upon only a few, and those the most distinguished men in Germany. His patients loved him, and it is said of him that even as a surgeon the children never feared him.

Like Billroth and Richard von Volkmann, Thiersch occupied his leisure hours with the study of art and literature, for which he had a marked and perhaps an hereditary predilection. He has more than once appeared in the rôle of literary historian, for example, as interpreter of Shakespeare's heroes.

His pleasing personality and sparkling humor, together with his origin and high culture, assured him the friendship of those in high places in the land. King Albert of Saxony numbered him among his personal friends, and as his body was borne to the grave, with an accompaniment of military honors seldom wit-

¹ Director of the Creditanstalt.

nessed in Leipzig, among the massive floral decorations could be seen a huge laurel wreath interwoven with white azaleas and bearing the crown and initials of the king.

That the death of these two giants among men has been keenly felt throughout the civilized world is evidenced by the numerous addresses that have been delivered and the articles that have appeared in so many widely separated countries. Nevertheless, however paradoxical it may appear, the loss is by no means an irreparable one. Each lived to accomplish more than is generally permitted to a single individual. Both laid the foundations of structures on which future generations can safely build. Both have gone to their well-earned rest, full of years and honors. But their works survive them, and perhaps no more fitting epitaph for them could be found than that of Sir Christopher Wren, in St. Paul's Cathedral, "Si monumentum queris, circumspecte."

L. F. B.

SOCIETY PROCEEDINGS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

*Twenty-third Annual Meeting, held in Denver, Col.,
October 1, 2, 3, and 4, 1895.*

(Continued from page 419.)

THIRD DAY—OCTOBER 3RD.

DR. W. P. MUNN, of Denver, read a paper entitled

NATIONAL LEGISLATION FOR THE CARE OF PUBLIC HEALTH.

He declared that the failure of Congress to support a National Board of Health was a source of deep regret to the working sanitarians of the whole country. For years the medical profession had asked Congress to establish a department of public health, which shall give human beings as much attention, at least, as is bestowed upon animals. Dr. Munn's proposed law has been cast in definite form, and reads: "An act to establish laboratories of hygiene in connection with State boards of health, existing by law in several States." The drafted bill cites the object and duty of the projected laboratories to be the conducting of original researches or the verifying of experiments upon human diseases, and methods of prevention; upon the advantage of residence in certain localities under particular climatic conditions; as to the effect upon the health of soil, atmosphere, altitude, occupation, food, drink, clothing, and dwelling-places. In this connection it should be the duty of the Supervising Surgeon-General of the Marine-Hospital Service to furnish forms for the recording of the results of all investigations, and the duty of the laboratory to make the Governor of the State in which it is located a detailed report of its operations, and that copies be forwarded to the Marine-Hospital Service and the Secretary of the Treasury. Bulletins should be published every six months to be transmitted in the mails of the United States free of charge.

The proposition is to establish in each State and Territory, in connection with the State boards of health, a State laboratory of hygiene, to be supported by an annual appropriation from the government. This plan is similar to the agricultural experiment-stations in con-

nection with the various agricultural colleges of the different States. The paper suggests that in States having no State boards the congressional appropriation would be stimulating in that State boards might be placed in existence, and finally that \$15,000 per annum be appropriated by the national government to each State.

Many advantages would accrue to sanitary science from the co-operation of laboratories working by co-ordinated methods upon similar problems.

DISPOSAL OF THE DEAD.

The Committee on the Disposal of the Dead made a report through its chairman, Dr. C. O. Probst, of Columbus, Ohio, detailing the order of the building of all crematories and the number of dead bodies consumed to within recent date:

	Bodies.
Washington, Pa.,	1884 89
Fresh Pond, N. Y.	1885 1554
Buffalo	1885 250
Pittsburg	1886 100
Cincinnati	1887 314
Detroit	1887 183
Los Angeles	1887 182
St. Louis	1888 437
Philadelphia	1888 399
Baltimore	1889 84
Swinburne Is., N. Y.	1890 109
Troy	1890 56
Waterville, N. Y.	1891 5
Davenport, Ia.	1891 86
San Francisco	1893 200
Chicago	1893 87
Boston	1893 118
San Francisco	1895 28

There has been a total of 4281 bodies consumed since the foundation of the first crematory, of which 2783 were males and 1498 females. The cost of burial is usually \$25, though in San Francisco \$60 is charged. The only States in which there are laws governing cremation are Massachusetts, Michigan, Pennsylvania, and Ohio. Dr. Probst said that the only objection that had been advanced against cremation was a legal one, claiming that this method destroyed the evidences of crime, while on the other hand it killed all germs of contagion.

DR. G. T. SWARTZ, of Providence, R. I., contributed a paper entitled

BACTERIOLOGIC RESULTS FROM MECHANICAL FILTRATION.

He related in detail the results of a series of experiments conducted by the city of Providence, which proved conclusively that mechanical filtration to remove bacteria from water was possible, and that it had been successfully done in the experiments referred to.

A paper on the

MEDICAL INSPECTION OF SCHOOLS

was read by DR. S. H. DURGIN, of Boston, who last year introduced the system of medical inspection of the schools in Boston. He gave the results of a four-months' trial of the plan, showing that it was actually a necessity in the schools if the health of the pupils was to be protected. The figures given showed that over 1000 cases of infectious diseases were detected in time to prevent a spread of the contagion.

DR. A. W. SUITER, of Herkimer, N. Y., followed with a contribution entitled

DISPOSAL OF THE DEAD, WITH ESPECIAL REFERENCE TO THE PREVALENT PRACTICE OF EMBALMING,

in which he called attention to the fact that the embalming methods of to-day were not successful, and only resulted in filling the body with poisons which eventually contaminated the soil and streams of the cemeteries. For example, a recent examination of the waters of Scajaquada Creek, which flows through Forest Lawn Cemetery, Buffalo, showed that they were impregnated with considerable quantities of arsenic of the kind used in the prevalent method of embalming. A law to regulate embalming was considered imperative.

DR. S. E. SOLLY, of Colorado Springs, read a paper entitled

INFLUENCES PECULIAR TO HIGH ALTITUDES UPON SANITARY CONDITIONS.

He argued that the special effects of altitude are directly produced neither by reduced pressure of the atmosphere nor by a reduced amount of oxygen affecting the lungs and heart, but by the amount of oxygen-pressure. When air is inhaled into the lungs a certain proportion of the total amount of oxygen contained in the air is absorbed by the hemoglobin. The endeavor was made to show that the peculiar effects of high climates are to increase the number of red blood-corpuscles and the amount of hemoglobin and the power of blood-absorption. The chest-expansion is also increased, the latter being admitted by all observers, who have remarked frequently upon the almost emphysematous character of the breathing, especially at the apices of the lungs of the native-born children and old residents.

As to the effect of altitude upon disease, it is found that better results are obtained in high than in low climates upon all diseases where anemia is the most important factor in the disease, and also in chronic germ-diseases, such as tuberculosis, provided, of course, that in either case some of the conditions do not exist.

DR. FELIX FORMENTO, of New Orleans, Chairman, read the report of the Committee on the

ABUSE OF ALCOHOL FROM A SANITARY STANDPOINT.

The ground was taken that alcoholism does not apply to taking a glass of pure wine at meals, or a glass of pure whisky. Alcoholism was defined as meaning the chronic excessive use of alcoholic drinks. The habitual use of strong liquors cannot be too strongly condemned. The report showed the difference between the effects of pure and impure liquors on the system. Good wine cheers and strengthens, but does not inebriate. Alcoholism is one of the potent factors in crime, suicide, and poverty. It peoples our hospitals; it is responsible for cripples, epileptics, and, while it exists mostly among the poorer classes, the wealthy and intellectual do not escape.

DR. CHARLES DENISON, of Denver, read a paper on

DEGENERATIVE HEREDITY, OR SOME DEGENERATIVE INFLUENCES OF MODERN CIVILIZATION UPON HEALTH.

He discussed the subject under five propositions, as follows:

1. Life-saving and life-prolonging means tend to suspend the law of natural selection.

2. Extremely intellectual and nervous lives propagate physically defective offspring.

3. Confined occupation, hindering development, leads to physical degeneracy in subsequent generations.

4. The growing independence of women, involving the withdrawal of desirable women from motherhood, tends to cripple the race.

5. The young must be forewarned, the people physiologically enlightened, and the State has a duty to perform.

FOURTH DAY—OCTOBER 4TH.

DR. MANUEL CARMONA Y VALLE, of Mexico City, Mexico, read a paper on the

PROPHYLAXIS OF YELLOW FEVER.

He said that in 1882 he began subcutaneous injections of urine into the cellular tissues of the back part of the arms of those afflicted with this malady. He found that he could vaccinate, so to speak, a sound person with the fluid from a patient who had had the fever for four or more days, and that those submitted to this process were immune from any further danger of contagion. He has made 1358 inoculations, and there has never followed any other consequence than the formation of a single abscess at the site of injection. This method has been used successfully in Panama by Dr. Garcia del Tornel. From 1882 to 1883, while first experimenting, 208 persons were treated, and a relative of the author, employed in the Custom House, although attacked, was not compelled to go to bed. Surgeon-General George M. Sternberg, of the United States Army, who has been in correspondence with the author, proposes that the residuum of urine be obtained by the evaporation of the liquid in a vacuum. Dr. Bouchard, of Paris, has for some time been investigating the treatment, and reports successful results in his experiments on animals.

Before making an inoculation Dr. Carmona dissolves 5 centigrams of residuum in 1 gram of pure water, and injects with a Pravaz syringe.

DR. EDUARDO LICEAGA, of Mexico City, made a further contribution to the study of yellow fever in connection with its medical geography and prophylaxis in the Mexican Republic. He said there are only two points on the Atlantic Coast where yellow fever is epidemic, and none along the Pacific Coast—Vera Cruz and the district situated at the extreme northern point of the peninsula of Yucatan. It commenced last January with 9 cases, reaching its maximum in July, with 225 cases. In 1894 thorough measures were taken to disinfect fever-scourged districts.

Dr. Liceaga claims that the means of combating the disease must be sought in the inoculation of blood-serum from persons already attacked, or who have already suffered from the disease, or by inoculation of blood-serum from animals that have already acquired immunity.

A paper was read in Spanish by DR. JESUS E. MONJARAS, of San Luis Potosi, Mexico, on

THE NECESSITY FOR THE ESTABLISHMENT OF SANATORIA TO PREVENT CHLOROSIS AS THE BEST PROPHYLACTIC AGAINST PULMONARY TUBERCULOSIS IN PARTICULAR AND CONSTITUTIONAL DISEASES IN GENERAL.

Several papers were read by title and referred to the Publication Committee.

The following officers were elected:

President—Dr. Eduardo Liceaga, Mexico City, Mexico.

First Vice-President—Dr. A. A. Woodhull, Denver, Col.

Second Vice-President—Dr. Henry Sewall, Denver, Col.

Secretary—Dr. Irving A. Watson, Concord, N. H.

Treasurer—Dr. Henry T. Holton, Brattleboro, Vt.

The place of the next meeting will be Buffalo, N. Y.

REVIEWS.

REMOTE CONSEQUENCES OF INJURIES OF NERVES AND THEIR TREATMENT. AN EXAMINATION OF THE PRESENT CONDITION OF WOUNDS RECEIVED IN 1863-65, WITH ADDITIONAL ILLUSTRATIVE CASES. By JOHN K. MITCHELL, M.D. Philadelphia: Lea Bros. & Co., 1895.

The volume before us is of peculiar interest because it deals not only with a certain class of injuries, but especially with the remote effects of these injuries. It is one of the misfortunes of hospital-practice that patients often remain under observation for an insufficient period of time. It can therefore readily be seen that observations embracing such an extended period as that from the late War up to the present time must possess a special value. The injuries dealt with range from mere contusions and commotions of nerves to nerve-section, neuritis, and spinal injuries.

Space forbids a detailed account of the subject-matter of the various chapters. Suffice it, however, to say that numerous interesting facts are presented, especially such as deal with the trophic changes following nerve-injuries, some of which, such as overgrowth of hair and nails, are somewhat unexpected. Other observations, for example those relating to persistent local elevation of temperature after nerve-injury, are very valuable. Some of the cases of spinal injury detailed are important, because some of the phenomena observed resemble those occurring in railway-spine or traumatic neuroses; thus hysteroid convulsive seizures occur closely resembling those occasionally observed in railway-cases. In the chapter upon ascending and migratory neuritis the author details a number of cases in which not only extensive spreading of inflammation along the nerve-trunks occurred, but also various trophic changes ensued. Regarding this form of neuritis, the author believes that the following inferences will be borne out by more extended observations:

1. Pressure, however brought about, whether by inflammatory exudate, external injury, by blow or weight, may be looked upon as a frequent factor, though not a constant one, in the production of spreading nerve-inflammation; but the presence of inflammation in the surrounding tissues, even in direct contact with the nerves, exerts, curiously, little bad influence.

2. The larger nerve-trunks are more prone to present the phenomena of spreading inflammation after injury than small ones.

3. Neuritis may spread either centrifugally or centripetally, the latter, in traumatic cases, being the much more common form.

In brief, this volume contains a large amount of very valuable information gathered at a great expenditure of time and industry upon the part of the author. We may safely predict that for many years to come it will constitute a source of reference for facts regarding the subject with which it deals.

CLINICAL LECTURES ON DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D., F.R.S. 12mo, pp. 279. Philadelphia: P. Blakiston, Son & Co., 1895. Price, \$2.

THIS group of twenty post-graduate lectures, delivered at the National Hospital for the Paralyzed and Epileptic, deals with a number of interesting subjects in the attractive and lucid manner that characterizes all of the work of this distinguished author. The individual lectures have already been published in various medical journals, but Dr. Gowers has rendered the profession a service by collecting them into a single volume and presenting them in connected form. The following subjects have been considered: The Principles of Diagnosis of Diseases of the Nervous System, Mistaken Diagnosis, Argyria and Syphilis, Spastic Hemiplegia, Bulbar Paralysis, Facial Paralysis, Facial Contraction after Palsy, Acute Ascending Myelitis, Locomotor Ataxy, The Foot-clonus and its Meaning, Syringomyelia, The Treatment of Muscular Contraction, The Infantile Causes of Epilepsy, Neuralgia, Lead-palsy, Saturnine Tabes, and Optic Neuritis. The volume, as a whole, is characterized by Dr. Gowers' pleasantness of style, clearness and simplicity of expression, and wide range of acquaintance with all of the details of his subject, and takes a place alongside of other works by the same author. Dr. Gowers expresses the belief that the knee-jerk is never absent unless there is structural disease in muscle, nerve, or cord, or (rarely) within the skull, apparent absence in health being attributable to some defect in method. In the treatment of locomotor ataxy the first place is given to arsenic, and the second to aluminum in the form of the chlorid. In the treatment of neuralgia a combination of strychnin with cannabis indica or gelsemium and nitroglycerin is highly spoken of.

CORRESPONDENCE.

"AN ACT TO PROVIDE FOR THE MORE EFFECTUAL PROTECTION OF THE PUBLIC HEALTH."

To the Editor of THE MEDICAL NEWS,

SIR: Justice and injustice, care and carelessness, studied forethought and equally studied disregard characterize the recent "Act to provide for the more effectual protection of the public health," etc.; copies of which have been recently sent by the Board of Health to all Philadelphia physicians.

By it a doctor cannot avoid acting as the agent of the board, even when he has done nothing to signify his willingness to assume responsibility. "Cases" brought to him or her for examination, even if treatment be refused, must be immediately reported, or the penalty incurred; and full particulars as to name, location, and disease must be given, "together with such other in-

formation relating thereto as may be deemed important by said health-authorities," and no man can foresee what they may deem important, and so this clause is open to many grave abuses.

SEC. 2. "They may at once place, or cause to be placed, in a conspicuous place or places . . . a placard or placards." Evidently they are not obliged to do so, the "may" is permissive rather than mandatory; and in lieu of the placard they may establish a quarantine "with guard or guards."

Now the cost of this protection falls all too heavily upon the poor man. His occupation is too often in his own dwelling; his small grocery, his cobbler's bench, his tailoring is ruined by the placard. Does he, as a jobbing mechanic, go out on calls for his services, he is shunned. The women of the houses are dressmakers and milliners, do sewing by hand or machine, or wash and iron; go out for daily work in families, and their means of obtaining a living are taken away, and often their whole run of business is fatally ruined. In the tenement-houses, filled with many separate families, one case of contagious disease, one small child in some remote, unvisited room, would suspend the avocations of all indefinitely. No wonder that with such legislation the poor dread the doctor as the entering wedge for the Board of Health, and that doctor becomes most popular with them who conceals his cases. Perhaps no scheme short of an order for the general slaughter of the infected family would so thoroughly defeat its own intention as this, coupled as it is with the indefinite power "to establish such rules and regulations regarding the destruction and disinfection of infected bedding, clothing, or other articles which have been exposed to infection" as may be necessary. For no compensation is given for such articles—the hardly earned and carefully guarded treasures of the poor household; and, again, as in the matter of placards, the poor pay too dearly, too exclusively for the so-eagerly sought general safety of the community. There is no crime in contracting disease, but misfortune more deadly than crime. Why should this loss fall upon one alone, which to the public is so great a gain? Every article destroyed should be paid for at a fair valuation; for every store closed there should be moderate compensation; for all enforced idleness from this cause half-wages; and, for the quarantined, rations which will prevent starvation.

Destruction and disinfection are words which have in times past too often conveyed to their victims one and the same meaning; and carpets, blankets, curtains, bedding, and household linen—the pride of the thrifty—have gone to disinfection "where the woodbine twineth." This, too, in the period when the disinfecting apparatus of the city was but an old iron pot in which to burn sulphur, or later a questionable oven at the smallpox hospital, where antagonistic bacteria had a struggle for supremacy, with the odds decidedly in favor of the unknown germ of variola.

SEC. 3. "The head of the family shall be liable for the fine or penalty in any case where such placard or placards are removed, defaced, covered up, taken down, or destroyed with his or her knowledge or consent," etc.

Evidently when the placard disappears, it will not be by orders of "him or her." Oh, no! The householder will rage and throw his or her religion to the winds, and flood the air with denunciations of the culprit, but the

small boy will seize the golden moment when the "copper" is resting from his labors, and the beautiful, bright placard, yellow as a dandelion, will flaunt no more on the white front door or the garden-wall.

SEC. 4 provides kindly for the physical rest of the weary undertaker, except "between the hours of five ante-meridian and eleven post-meridian." When are those hours; for except in this definitely marked period he may rest in the bosom of his family; happy undertaker—would that beneficent legislators would do as much for us. At all other times, however, he must hurry up the funeral within thirty-six hours, unless, as in Sec. 5, "special permission be granted by the health-authorities extending the time during which said body may remain unburied, for special and satisfactory cause shown."

What special and satisfactory causes may often exist may be surmised when it is known that in that remote past, already alluded to, a physician who had given a certificate of death from diphtheria in a most aggravated and well-known case was visited by the health-officer in person, and implored by that high official to withdraw his certificate and substitute one of croup, in order that there might be a public funeral; for otherwise he "would lose many votes."

SEC. 6. "All services must be private." Possibly this might mean that nurses should not swab throats at windows in view of the public, nor undertakers cool corpses in backyards; but if it means religious services we cannot make it agree with the next paragraph—"And the attendance thereat shall include only the immediate adult relatives of the deceased and the necessary number of adult pall-bearers." We must remember that this applies to any death from smallpox, cholera, diphtheria, diphtheric croup, membranous croup, scarlatina, typhoid fever, typhus fever, yellow fever, epidemic cerebro-spinal meningitis, relapsing fever, and last, but not least, leprosy. Even the leper is apparently deprived of the services of his spiritual advisers, and yet leprosy is a peculiarly religious disease, all we actually know about it being in the Bible, and almost the only people we remember to have had it being Naaman the Syrian and Miriam the sister of Moses. No Father Damien, according to this law, could recklessly risk his life for it now, for even despised altruism would suggest that while he might sacrifice himself he could scarcely sacrifice the undertaker with propriety, and in Section 9 no undertaker or other person or persons "shall in any case furnish or provide for such funeral more than the necessary number of conveyances for said adult relatives and pall-bearers," there evidently leaving the corpse "without benefit of clergy." Of course, it may be said that the mention of said funeral services implies the clergymen as well as the corpse, as neither is specified; but for the conveyance of the latter there is special provision for in Section 9. It is given, a vehicle "used for the purpose of conveying a corpse only." Surely there might have been added to the scanty train another vehicle "for the clergyman only," as by the terms of the act, unless he feign death, he cannot get in with the corpse, the word "only" forbidding him.

In fairness we can say that the regulations for schools and Sunday schools are good so far as they go, but time enough after recovery is not allowed, knowing, as we now do, how long the reluctant bacillus of diphtheria

lingers in the fauces. But if longer than thirty days were allowed the attendance in the beloved schools would suffer. Yet the schools, as has been amply proved, are the very hot-beds and culture-fields of disease, of course excluding leprosy, whose spread is mostly in the imagination.

Wisely the power of granting return certificates is given to medical inspectors rather than to the family-physician.

In Section 15 we find the question raised as to the use of vehicles to convey the sick. When the city shall have on call a reasonable number of ambulances for hire or free service, then will be the time to enforce these provisions of the act against conveyance of contagious disease in hired vehicles. We begin at the wrong end. People are always ready to do the safest and best thing when they know how and when it can be done. Give us good hospitals, where one disease can be safely isolated from another; good ambulances, to convey the sick from place to place; and then legislation to enforce their use. Till then such laws will only excite derision and disappointment.

To refer once more to placards. The section concerning them applies to the great apartment-houses, hotels, and boarding-houses, as well as to private dwellings, and will make landlords and agents still more reluctant to let rooms or give board to families with children.

It will also result in the enforced exit of cases of contagious disease from such houses to their only refuge—the Municipal Hospital. And how will they get there? For the "victim of disease" must not, according to Section 16, "wilfully expose himself or herself in any street or public place or public conveyance." So that unable to stay and unable to go, unable to walk, for that is "exposure," and unable to ride, there will be left for "him or her" only to promptly die. There seems to be no fine for dying, but for living under all these conflicting circumstances "not less than five or more than one-hundred dollars."

Is the world becoming a world of cowards, or has religion been so utterly, though silently, overthrown that we center all our hopes on this life and fight with a mad eagerness for every additional moment? The old courage that faced disease, contagion, and death seems rapidly disappearing with the advent of the vaunted "new age," and the kindergarten illustrations of bacterial life have struck sudden terror to the hearts of the children of men. With knowledge has come fear, and the bravery of the old was, it seems, but ignorance of danger. Fatalism is gone and the stolid heart of the fatalist; bacteria and bacilli have come, and our courage oozes from our sterilized finger-ends. We evidently believe the appeal to Bichlorid more potent than the appeal to an overruling Providence.

Sincerely yours,

AN OLD PHYSICIAN.

THE USE OF APOMORPHIN IN NARCOTIC POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of Sept. 7th Dr. Brown protests against the use of apomorphin in opium-poisoning, citing a case that terminated fatally after the exhibition of $\frac{1}{2}$ gr. hypodermically.

If I may criticise the case quoted, the apomorphin was given in too large a dose and too late to be effectual. If $\frac{1}{12}$ instead of $\frac{1}{2}$ gr. had been given immediately, instead of after the lapse of more than an hour, the result would possibly have been different. I hold the opinion that apomorphin used cautiously and promptly is indispensable to the proper treatment of some cases of narcotic poisoning. Recently I was summoned to see a case in point: a woman, who during a fit of acute mania, had, with suicidal intent, swallowed 12 grains of opium-extract with chloroform and Indian hemp, in the form of chlorodyne. I found her sleeping soundly, and when aroused she endeavored to jump out of the window. After a violent struggle we succeeded in throwing the patient on the floor, and with the utmost difficulty a subcutaneous injection of $\frac{1}{16}$ gr. apomorphin was given. Profuse emesis resulted and within a minute the patient was out of danger. To have used the stomach-pump or to have followed any other method of treatment would have been impossible.

Truly,

ROBERT W. HAYNES,

LOS ANGELES, CAL.

NEWS ITEMS.

The Revival of the Index Medicus.—The following circular-letter has been issued:

1627 Walnut Street,
Philadelphia, October 1, 1895.

DEAR DOCTOR: The *Index Medicus*, as you doubtless know, has ceased to exist, because the number of subscribers was not sufficient to pay for its publication. Its value was so great that the undersigned, a self-constituted committee, have concluded to appeal to the literary workers of the medical profession to unite in reviving it. The nature of the *Index* is such that it can never obtain a large subscription-list, but it is invaluable to those engaged in literary research. It will require about \$5000 annually to publish it. The former editors are willing to take up the work again if 200 subscribers at \$25 per year can be obtained. We have each agreed to subscribe for a period of five years; will you not do likewise, and mail the accompanying blank, duly signed, to the Secretary of the Committee? If the term seems too long, will you not fill in the blank for three or less years? The Committee also begs you to get as many of your friends as possible to subscribe, and to send to the Secretary the names of any person, society, or library likely to become a subscriber. Yours truly,

WILLIAM PEPPER,
S. WEIR MITCHELL,
H. A. HARE,
DE F. WILLARD,
J. C. WILSON,
H. C. WOOD,

J. WILLIAM WHITE,
W. W. KEEN,
GEORGE M. GOULD,
JOHN H. PACKARD,
E. LAPLACE,

JOHN B. ROBERTS, Secretary,

1627 Walnut Street, Philadelphia.

The appended copy of the blank mentioned can be cut and used by any who contemplate subscribing:

..... 1895.

I, the undersigned, hereby agree to subscribe for one copy of the *Index Medicus* for _____ year, at \$25 per year, subject to the following conditions: viz., When

200 subscriptions have been received by the editors the publication is to commence, and upon notification of this I will send \$25 to them. If by December 1, 1895, the 200 subscriptions have not been obtained, the attempt to revive the publication will be abandoned.

(Address)

The New York State Association of Railway-Surgeons will hold its fifth annual meeting in the Academy of Medicine, New York City, November 12, 1895. The following program has been arranged:

Preparation of Patient for Amputation, with Remedies Used or Useful in the Treatment of Shock, by Dr. Frank H. Caldwell, Sanford, Fla.; Physical Endurance, by Dr. C. M. Daniels, Buffalo; Multiple Synchronous Amputations, by Dr. W. L. Estes, South Bethlehem, Pa. Discussion on foregoing papers opened by Drs. J. B. Murdoch and N. Y. Leet. Important Unsettled Questions in Railway Surgery, by Dr. M. Cavana, Oneida; President's Address; The Responsibility of the Railway-Surgeon from a Lawyer's Standpoint, by Judge A. H. Dailey, Brooklyn. Discussion opened by Dr. George Chaffee and Clark Bell, Esq. The Importance of a Physical Examination of an Applicant Before He is Placed in the Railway-Service, by Dr. R. H. Reed, Columbus, Ohio. Discussion opened by Dr. G. P. Conn. What is Shock, and How Shall We Treat It? by Dr. R. H. Cowan, Radford, Va.; Arterial Anastomosis, by Dr. F. H. Peck, Utica; First Aid to the Injured, by Dr. C. S. Parkhill; Shock and Its Proper Treatment, by Dr. W. V. R. Blighton, Tonawanda; Why Amputate? by Dr. Stephen Smith; When Shall We Amputate? by Dr. J. B. Murdoch; Where Shall We Amputate? by Dr. J. S. Wight; How to Amputate, by Dr. J. A. Wyeth.

Decreased Mortality from Diphtheria in New York City.—Mayor Strong has received from President Charles G. Wilson, of the Board of Health, a table of vital statistics, showing a large decrease in the number of deaths from diphtheria and croup since the Health Board began the use of antitoxin. The figures showing the number of cases, the deaths, and the percentage of deaths to cases in the first, second, and third quarters of the years from 1891 to 1895, inclusive, are as follows:

Year.	Cases.	Deaths.	Per Cent.
1891	3686	1349	36.59
1892	4156	1540	37.04
1893	4721	1763	37.34
1894	7446	2264	30.67
Totals 1891-1894	20,011	6936	34.66
Totals 1895 . .	7921	1643	19.43

President Wilson says: "The reduction in the mortality-rate in the first, second, and third quarters of 1895, as compared with the average death-rate for the corresponding periods of the previous four years, has been 43.94 per cent. This large reduction in the mortality-rate from diphtheria and croup for the first three quarters of 1895 is attributed mainly by the medical officers of this department to the introduction and use of diphtheria-antitoxin, and, if this remedy had been

generally or universally employed, the reduction in the mortality-rate would, doubtless, have been larger."—*N. Y. Herald.*

A Gift of Valuable Medical Journals will be made to the medical library that appears to offer the best means of service to the medical community in which they may be placed. The conditions attending the gift are that the library shall not have duplicates of the journals to be given them and shall agree to bind them substantially. The journals offered are files of *THE MEDICAL NEWS*, the *American Journal of the Medical Sciences*, and the *Medical Record* for the past ten years. Correspondence is solicited. Address the editor of *THE MEDICAL NEWS*.

Baron Felix Hippolyte Larrey, the distinguished French Surgeon, died at Paris, October 8th, at the age of eighty-seven years. In 1841 he became Professor of Surgical Pathology at Val de Grace. During the Second Empire he was Surgeon to the French Emperor. He was also a member of the Institute and of the Academy of Medicine.

Dr. William Macpherson died at Philadelphia on October 13th, at the age of fifty-five years. He was an assistant surgeon in the army during the civil war.

BOOKS AND PAMPHLETS RECEIVED.

The Medical Millennium. The Doctorate Address of the Medical Department of the University of Louisville, Session of 1894-95 By H. A. Cottrell, M.D. Reprinted from the *American Practitioner and News*, 1895.

Report of Seven Cases of Double Castration for Relief of Enlarged Prostate Gland. By H. O. Walker, M.D. Reprinted from the *New York Medical Journal*, 1895.

Proceedings of the Medical Examining Board of Virginia. First Semi-annual Session of 1895. Held in Richmond, Va., May 8 and 9, 1895.

Annual Report of the Department of Health of the City of Chicago for the Year ended December 31, 1894. Arthur R. Reynolds, M.D., Commissioner of Health. Chicago, 1895.

The Deformities of the Human Foot; with their Treatment. By W. J. Walsham, M.B., C.M. Aberd., F.R.C.S. Eng., and William Kent Hughes, M.B. Lond., M.B. Melb., M.R.C.S. Eng., L.R.C.P. Lond. New York: William Wood & Co., 1895.

Modern Methods in Cataract-operations. By J. O. Stillson, M.D. Pamphlet. Read before the Indiana State Medical Society, June 7, 1895.

Suprapubic Cystotomy for Calculus of the Bladder. By A. H. Meisenbach, M.D. Reprinted from the *Journal of the American Medical Association*, 1895.

The Right to Question Authorities and the Value of Medical Testimony. By James W. Keiser, M.D. Reprinted from the *Medical and Surgical Reporter*, 1895.

A Successful Case of Porro-Cesarean Section. (Modified.) By Hunter Robb, M.D. Reprinted from the *Western Reserve Medical Journal*, 1895.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the Year ending Fourth Month 25th, 1895. Presented to the One-hundred-and-forty-fourth Annual Meeting of the Managers of the Pennsylvania Hospital. By John B. Chapin, M.D., Physician-in-Chief and Superintendent. Philadelphia, 1895.

Fourteenth Annual Announcement of the College of Physicians and Surgeons of Chicago. Session of 1895-96. Chicago: Published by the College, 1895.

Report of Cases of Brain-lesions—Abscesses, Meningitis, and Sinus-thrombosis—Resulting from Disease of the Middle Ear. By J. T. Eakridge, M.D. Reprinted from *Medicine*, 1895.